THE LITERARY GAZETTE

AND

Journal of the Belles Lettres, Arts, Sciences, &c.

No. 1449. LONDON, SATURDAY, OCTOBER 26, 1844. PRICE 8d. *Stamped Edition, 9d.*

REVIEWS OF NEW BOOKS.

The Life of the Rev. Andrew Bell, D.D., &c. &c. 3 vols. 8vo. London, Murray; Edinburgh, Blackwood.

THE first volume is by the late Laureate, and edited by his widow; the last two (or, as the title-page has it, "*the two last,*") by his son, the Rev. C. Cuthbert Southey, B.A. There is no complaint to be made of insufficiency of size in this work; for the several cooks, if not too many to spoil the broth, have certainly given us enough of it. And, to say the truth, it is of a very thin quality, and not at all of the essence of the veritable *consommé*. Being a great book, it is nevertheless a great evil; and we have only to express a hope, for the sake of all concerned, that Dr. Bell left and appropriated sufficient funds for its expense in writing, editing, printing, and publishing.

The biography of the famous founder of the Madras system of education might well have been comprised in one of these volumes; and two, at any rate, must have been a task. Much of the correspondence is wearisomely uninteresting and trifling; and personal events, best calculated to develop character, are slurred over with apology or censure, as the case may be. Our notice may, therefore, be comparatively short.

Andrew Bell was the son of a reputable barber in St. Andrews, Scotland, and born in 1753. Education has long, fortunately for that country, been cheap there, and the children of her humbler classes have all been enabled, with little effort on the part of their parents, to obtain that blessing not only at a small price, but sound and good of itself. Thus our subject got his parochial schooling (quite different from that of the same name in England, imparted by schoolmasters elected by the parish, and superintended by the clergy and heritors, and who receive a salary as well as quarterly fees from their pupils); and was afterwards entered in the university of his native town. Here his most friendly and effectual teacher was the eccentric Wilkie, the author of the *Epigoniad*, and one of the dirtiest of pedagogues in the matters of skin, linen, and apparel. Of him Dr. Southey has given us a curious and rather amusing episode.

At the age of twenty-one, Andrew went to Virginia as himself a teacher of youth; and remained there seven years, principally engaged in the family of a Mr. Braxton; but, as it would seem, with genuine Scotch prudence and economy, turning a penny, as he might, in commercial specs. To England he returned with two pupils, the sons of Mr. Braxton; and with the savings of his one, and the profits of his other pursuit. With these young gentlemen he had at first some trouble; but latterly at St. Andrews did better with them, and on their recal some dissatisfaction and pecuniary harassment ensued.

About this time he, however, signalised himself by fighting a duel; and, being short-sighted, by firing at his second, whom, probably owing to the same defect, he luckily missed.

In the course of circumstances he took orders in the Church of England, and (by an academic mistake) the degree of a doctor of medicine at St. Andrews, with which, in 1787, he sailed on adventure for India. In India, Dame Fortune, the fickle goddess, shewed no fickleness towards Andrew Bell; but smiled upon and caressed him as if he were her own petted offspring. He was appointed to chaplaincies, deputy chaplaincies, and we know not how many other posts and sinecures; and the money "came tumbling in." We are not sure that he did not take Pondicherry; but at any rate he had a rich slice of the prize-money. Lord Doure and Mr. Dundas (the late all-powerful Lord Melville) were his patrons: and he really got on at an astonishing pace.

At Madras there was a military orphan asylum, to which the attention of the chaplain of several regiments was naturally directed; and it fell out on a day, when stirring abroad, that he saw a parcel of Malabar children (at a sort of dame's school), who had been taught to teach each other, and were in this manner writing away their lessons on the sand. Now though on such a material we cannot say *litera scripta manet*, this writing *mansit* on Dr. Bell's mind, on which it made a strong and happy impression:

"Happening (as we have stated), on one of his morning rides to pass by a Malabar school, he observed the children seated on the ground, and writing with their fingers in sand, which had for that purpose been strewn before them. He hastened home, repeating to himself as he went, *εὕρηκα*, 'I have discovered it;' and gave immediate orders to the usher of the lowest classes to teach the alphabet in the same manner, with this difference only from the Malabar mode, that the sand was strewn upon a board. These orders were either disregarded, or so carelessly executed, as if they were thought not worth regarding; and after frequent admonitions, and repeated trials made without either expectation or wish of succeeding, the usher at last declared it was impossible to teach the boys in that way. If he had acted on this occasion in good will, and with merely common ability, Dr. Bell might never have cried *εὕρηκα* a second time. But he was not a man to be turned from his purpose by the obstinacy of others, nor to be baffled in it by their incapacity; baffled, however, he was now sensible that he must be, if he depended for the execution of his plans on the will and ability of those over whose minds he had no command. He bethought himself of employing a boy, on whose obedience, disposition, and cleverness he could rely, and giving him charge of the alphabet class. The lad's name was John Frisken; he was the son of a private soldier, had learned his letters in the asylum, and was then about eight years old. Dr. Bell laid the strongest injunctions upon him to follow his instructions; saying, he should look to him for the success of the simple and easy method which was to be pursued, and hold him responsible for it. What the usher had pronounced to be impossible, this lad succeeded in effecting without any difficulty. The alphabet was now as much better taught, as till then it had been worse than any other part of the boys' studies; and Frisken, in consequence, was appointed permanent teacher of that class. Though Dr. Bell did not immediately perceive the whole importance of this successful experiment, he proceeded in the course into which he had been, as it were, compelled. What Frisken had accomplished with the alphabet class, might, in like manner, be done with those next in order, by boys selected, as he had been, for their aptitude to learn and to teach. Accordingly, he appointed boys as assistant teachers to some of the lower classes, giving, however, to Frisken the charge of superintending both the assistants and their classes, because of his experience and the readiness with which he apprehended and executed whatever was required from him. This talent indeed the lad possessed in such perfection, that Dr. Bell did not hesitate to throw upon him the entire responsibility of this part of the school. The same improvement was now manifested in these classes as had taken place in teaching the alphabet. This he attributed to the diligence and fidelity with which his little friends, as he used to call them, performed his orders. To them a smile of approbation was no mean reward, and a look of displeasure sufficient punishment. Even in this stage he felt confident, that nothing more was wanting to bring the school into such a state as he had always proposed to himself, than to carry through the whole of the plan upon which he was now proceeding. And this, accordingly, was done. The experiment which from necessity had been tried at first with one class, was systematically extended to all the others in progression; and, what is most important with scholastic improvement, moral improvement, not less, in consequence of the system, is said to have kept pace. For the assistant teachers, being invested with authority not because of their standing in the school, retained their influence at all times, and it was their business to interpose whenever their interference was necessary: such interference prevented all that tyranny and ill-usage from which so much of the evil connected with boarding-schools arises; and all that mischief in which some boys are engaged by a mischievous disposition, more by mere wantonness, and a still greater number by the example of their companions. The boys were thus rendered inoffensive toward others, and among themselves; and this gentle preventive discipline made them, in its sure consequences, contented and happy. A boy was appointed over each class to marshal them when they went to church or walked out, and to see that they duly performed the operations of combing and washing themselves. Ten boys were appointed daily to clean the school-rooms, and wait upon the others at their meals. Twice a-week during the hot season, and once a-week during the monsoon season, they were marched by an usher to the tank, and there they bathed by classes."

And thus, in the year 1791, was this imperishable system introduced, from an accidental discovery by a man rightly constituted to make the right and best use of it; and what future generations of every civilised people will employ with great advantage, was learnt from the ex-

ample of a few dark-skinned native infants of the rude, simple inhabitants of Malabar!!!

With the subsequent difficulties the Doctor encountered in carrying his point with masters, ushers, &c., and establishing his admirable plan, we need not meddle.

He was what the fancy call an awkward customer to get into chancery or any other kind of dispute with: and so he turned these gentry to the right and left, and finally and fully had the school organised on his own principles. One worthy individual, to whom he applied to undertake the charge, replied in a style of such *bonhomie*, that we cannot resist the quotation of his answer:

"*Mr. Piezold to Dr. Bell.*

"Wepery, 23d May, 1795.

"Reverend and dear sir,—I have, indeed, much reason to be extremely sorry for having caused you now three days, one after another, so many pains and troubles, on account of the new charge proposed to me. No doubt all those proposals and representations you have favoured me with are in every respect praiseworthy, and by no means to be reproved, and I cannot choose but to acknowledge this very gratefully. But as I, being a man of family, can't act arbitrarily in the matter you are concerned in, but must absolutely accommodate myself to the humours and dispositions of Mrs. Piezold, to her liking and disliking, pleasing and not pleasing, so I am necessitated to give up immediately the whole scheme, as soon as she uttereth the least reply and objection, although the loss arising from that resignment be ever so great. Now, dear sir, you know already what Mrs. Piezold is so fear of—*vid:* that the lodging at the male asylum wont answer to her wishes, and to all the accommodations she enjoys now; besides this, several other circumstances dissuade her the undertaking of such a sudden change. Now, above all this, dear sir, I, for my part, after having maturely deliberated with myself, and well considered the basis of matters, you send so, and see very plainly, *ex post*, that we both are greatly mistaken concerning one another, and that especially (which I observe to my regret) you have judged quite amiss of all the capacities and abilities which you imagined I possess. No, not at the least. You recollect how I shewed you yesterday the most perspicuous marks of my being entirely incapable to succeed in the room of Mr. Harvey. This I did in some measure premeditately—and why so? for to make myself known to you in the very frame I am exposed to, and that the mistake, by which we both have been led astray, all at once might be abolished. You see, dear sir, this is sincerity; this is openheartedness. I do not doubt, yea, I am sure of it, you will very easily find another and more qualified subject than I am for to substitute it in the place of Mr. Harvey; I mean a person which will be able to accomplish all the great designs you aim at perfectly, and to perform every single duty desired of a school teacher, better than you ever can expect it from me. I recommend myself to your continued favour, and remain, with the greatest respect, reverend and dear sir, your most sincere friend and humble servant."

This sincere and straightforward German missionary did honour to the mission of Schwartz, whose companion he was; and his finding other reasons, besides his confessed hen-peckedness, for declining the office, is very good-natured and amusing. His inviter was of sterner stuff; for when he married in Scotland, he and his wife led a cat-and-dog life, and finally separated by mutual consent, apparently the only time they had agreed since their brief honeymoon, after a few years of bitter matrimony. It is possible that the lady, who had a good fortune of her own, would not submit to her husband's scholastic sort of discipline; and truly the Dr. throughout his life never endured much contradiction.

His health having become affected by climate, Dr. Bell came home in 1796, with a very considerable accumulation of fortune, which he afterwards improved from his church-preferments and other sources to a large extent.

His establishment of many schools in various parts, and his voluminous correspondence concerning them with many leading men of the age, fill a wide space in this publication, but require no particular notice from us. The following general dicta on two important educational questions, coming from so experienced a quarter, is all we shall quote in connexion therewith.

"Another subject which attracted a good deal of attention was—'How far instruction, by books composed in given questions and answers, should be carried?' Dr. Bell's opinion was, that it should not be extended beyond a few elementary tracts, such as the Church Catechism broken into short questions, and the chief truths of the Christian religion. His reasoning on the subject was to this effect:—'The rehearsal of answers from book, by rote, contributes little to the stock of knowledge, when, as often happens, it is no more than a memory of words, without understanding the sense. By reading history, for example, in this manner, the interest and chain of information are interrupted: words are pronounced, not things learnt. On the other hand, by examining the scholar in the course of his studies, in every sentence, and much more if they examine one another by questions, put in every way, as they go along, you will certainly discover whether they understand what they read, and can instruct them wheresoever they are deficient. The questions are varied with the progress and attainments of the class, and frequently rise out of the answers which are made.' This was what he uniformly recommended; and the result was, that this course was generally followed by the schools in union with the National Society. The subject of corporal punishment also was often brought forward. It has been seen how admirably the new system of education had succeeded from its commencement, in precluding all punishments of this sort. It seems, indeed, to have been one of its most peculiar and striking properties, to substitute discipline for punishment (things too often confounded), and by checking every evil in the bud, to obviate the necessity of violent measures. It may *possibly* be true, that there are some minds so constituted that nothing but the fear of bodily pain will influence them; but these are rare instances, and we must legislate for the many and not for the few. Who can witness the 'burning blush of shame,' which flushes the cheek of any ingenuous boy subjected to corporal punishment, without being conscious that some of the noblest feelings of nature are being outraged? In manhood, a blow is looked on as the greatest insult that can be offered; and can we suppose that those feelings, which in riper years attain such height and acuteness, do not, in some degree at least, exist in childhood? I would not, however, be understood to allude here to the occasional punishment of mere children, but to the practice of flogging, which is even now, I regret to say, in use at many of our public and private schools. On this point Dr. Bell's opinions had always been most decided; and he omitted no opportunity of expressing them. In all his publications he shews that the new system, when properly acted upon, has been found to prevent the necessity of corporal punishment; and in this opinion he was seconded by the great body of the National Society, and especially by Lord Kenyon, who was particularly anxious that Dr. Bell should not, in any way, *appear* to countenance its adoption."

On the 27th of January, 1832, the Doctor made a good ending of it at Cheltenham; and on the 14th of February (St. Valentine's day, a festival for the young, this friend of youth) was buried in Westminster Abbey. "By his own request, the inscription to be placed on his tombstone is to be simply—'The author of the Madras System of Education.'"

He appears to have had much labour in finally disposing of his wealth, and frequently altered his wills. His views were so unsettled that no one could rely on them till he was dead; and his irritability of temper interfered with trusts, codicils, revocations, &c., in a degree painful to contemplate. Ultimately he limited his bequest to his sister and relatives; and gave 120,000*l.* to his foundations at St. Andrew's. He also instituted a Bell lecture at Edinburgh; and took order with respect to the publication of his writings, and, as we have expressed a hope, we presume of his biography.

He has rendered a prodigious service to mankind; and all his human faults and foibles rest with him in an honoured grave. The Lancaster dispute is not touched on by our authors, and we have no desire to revive the useless controversy. To and of all we say, *Requiescat in pace.*

Knight's Weekly Volume for all Readers.
XVI. XVII. XVIII.

Rambles by Rivers. By James Thorne.
Sketches of the History of Literature and Learning in England. By G. L. Craik. Vol. I.

THE first of these weekly issues is adorned with many pleasing and picturesque woodcuts, which, as a margent, well become the agreeable text. But of the last we are bound in public fairness to take a different notice; and for the following reasons:

As we have not been sparing in our praise of the good volumes of the series, it is only just that we should point out any which appear of an inferior quality. The *Sketches of Literature and Learning in England* is a very poor compilation from most inaccurate authorities, Warton, the Abbé de la Rue, and one or two others, by a writer who appears to us to be unacquainted with the subject itself, and who unluckily gets hold of most of the errors of his authorities, and adds to them a great many misapprehensions of his own. He literally knows nothing (further than the titles of a few books) of the great advance which has been made in the knowledge of mediæval literary antiquities during the last twenty years. He talks of Gildas, Nennius, and Asser, as though he never suspected that their authenticity had been questioned; and he believes in the Welsh poetry of the sixth century! The book is so absolutely filled with errors, that it would be a long and unsatisfactory task to enter systematically upon an examination of it; and we will only point out a few which strike us at first sight on cutting open the leaves. He tells us at p. 21, that Alcuin was an Irishman, although the commonest authority would have informed him that he was born at York. At p. 17, he says: "Aldhelm received his education chiefly from Maildulf, Meildulf, or Meldun, an Irish-

man, the founder of the monastery of Malmsbury, by whom he tells us he was thoroughly instructed both in Latin and Greek." Where Mr. Craik found Aldhelm telling this of himself, we cannot guess, as he has not left us any autobiographical sketch; but the fact is, that he learnt his Latin and Greek at Canterbury, under Adrian; that he never saw Maildulf, who lived long before his time; and that it was Aldhelm himself, and not Maildulf, who laid the first foundations of the monastery of Malmsbury. These are notorious facts.

A little further on we are told: "It would appear from the following verses of Negel Wireker, *an English student* at Paris in 1170, that his countrymen, whom they describe, were already noted for that spirit of display and expense which still makes so prominent a part of their continental reputation:

Moribus egregii, verbo vultuque venusti,
Ingenio pollent, consilioque vigent,
Dona pluunt populis, et detestantur avaros,
Fercula multiplicant, et sine lege bibunt."

And it is added in a note, "These verses *are preserved* by A. Wood, Antiq. Oxon. p. 55." Can Mr. Craik be ignorant that Nigellus Wireker was one of the most celebrated Latin poets of the end of the twelfth century, and that these verses are from his *Speculum Stultorum*, a poem found in dozens of manuscripts, and repeatedly printed? We might heap together instances of the total unacquaintance of the writer of this volume with the Latin literature of this period; but we go on to the Anglo-Norman and English.

Speaking of the mediæval dialects derived from the Latin, Mr. Craik says: "All these forms of bastard Latin, wherever they arose, whether in Italy, in Spain, or in Gaul, were known by the common name of Roman, or Romance, languages, or the Rustic Roman (*Romana Rustica*); and were by that generic term distinguished from the barbarian tongues, or those that had been spoken by the Celtic, German, and other uncivilised nations before they came into communion with the Romans." This sentence involves a very grave misapprehension. It was a notion of M. Raynouard (which is not true to the length he carried it) that in the classic days of Rome there existed a dialect spoken by the common people differing from the written Latin, by possessing a number of inelegant forms of words (*e. g.* nouns ending in *mentum*, the origin of French words ending in *ment*), and by greater irregularity in its grammatical terminations; and that from this dialect of the people, and not from the pure written Latin, the neo-Latin dialects, or Romance languages, were derived. This popular dialect Raynouard called the *Lingua Romana rustica*, a term which is here confounded with the Romance tongues themselves.

In describing the *Chanson de Roland*, published by M. Michel, Mr. Craik gives as his opinion, that "'The Chanson de Roland' would seem to be a more appropriate name for some particular portion of such a long composition than for the whole." And again, speaking of the work of a poet named David, "His poem was probably only a short composition; Gaimar calls it a *chanson*, or song, and speaks of it as having been set to music." We are really surprised that any one who writes on mediæval literature should not know that *chanson* is the correct term for the early metrical romances, and of all similar productions—they were chanted with the accompaniment of music. If he had only looked at the *Chanson de Roland* he would have seen that it was intended for music. What will Mr. Craik say to the numerous *chansons de geste*, some of which run to an extent of about *forty thousand lines?* This book is indeed compiled in part from prefaces: at p. 138, the writer cites the preface to M. Michel's edition of Benoit, to state the opinion there enunciated that Benoit who wrote the Chronicle was a different person from Benoit who wrote the Romance of Troy; but (probably never having looked farther) he is not aware that at the end of the book M. Michel retracts this opinion, having discovered proofs to the contrary.

The poor Abbé de la Rue has much to answer for, and in the present work he is sometimes dragged in for more than he intended. Mr. Craik gives the following account of Walter Map's romances:

"It was from this prose romance, and from a continuation of it by Walter Map, or Mapes, whose work is entitled 'Roman des Diverses Quêtes du Saint Graal,' and is dedicated to Henry II., &c. . . . Map, in addition to his 'Roman des Diverses Quêtes,' which is in two parts, continued the history of the knights who had engaged in the search for the Saint Greal in a third romance, also in prose, which he entitled 'La Mort d'Artur;' and he is also the author of another prose romance on the adventures of 'Lancelot du Lac.'"

This is a perfect specimen of the danger of a person describing what he never saw. The work in two parts, entitled *Roman des Diverses Quêtes*, must we think be a child of Mr. Craik's imagination. Map wrote three prose romances, which in reality form a continued series, and are rather three parts than three different romances. The first contains the history of Lancelot up to the time when he joined in the search after the Saint Grail—the second gives the history of *this* search (it is *not* divided into two parts)—the third contains the supplementary part of Lancelot's history, and finishes with Arthur's death. They are *not* dedicated to Henry II.

P. 142. "Guichard de Beaulieu describes himself as a monk of the priory of that name, which was a dependency of the abbey of St. Albans."

This information is taken from the Abbé de la Rue, who appears to have been dreaming (which was too much his custom) when he wrote it. If Mr. Craik had examined Guichard's poem, he would have seen that all he states is that he was a monk; in fact, there are reasons for believing Beaulieu to have been his family name, for he was a wealthy knight, who gave up his estates to his son and retired to the Abbey of Cluny. It was a similar dream of the Abbé de la Rue to make Everard the poet identical with Everard of Kirkham, which slight research would have shewn to be at least very problematical.

When Mr. Craik hazards opinions of his own, he is equally unfortunate as when he adopts those of others: we will only cite one specimen.

"It is impossible, for instance, to believe that the celebrated satirical poem on the 'Land of Cokayne,' which Warton says 'was evidently written soon after the Conquest, at least before the reign of Henry II.,' can, in the form in which we have it, be older that the year 1300. *It is very possibly not so ancient by a hundred years.*"

Mr. Craik has taken the statement of its not being [*much*] older than 1300 from a correction of Warton by another person; but he has overlooked one of the principal reasons for the statement, namely, that the *manuscript containing it* was written *within ten years after that date*, which entirely precludes any supposition of the poem having been composed a hundred years later. In fact, any one who can suppose that the language of the poem on Cocaygne could be written so late as the year 1400 is totally unfitted to write on early English poetry.

We have only pointed out a very small proportion of the errors of detail in this book, and we have taken no notice of the great errors in general principles. It is our wish merely to point out honestly its general character. Archæology is every day becoming more popular, and Mr. Knight is right to introduce it into his series: but treatises on such subjects should be in some degree proportioned to the wants of the day. We are the more sorry for the appearance of a work like this, because, in addition to its inaccuracy, it is extremely dull and heavy, whereas the subject might have furnished a couple of volumes no less entertaining than instructive.

Of all literature, that purporting to be "for the million," as it is called, ought to be the most correct; and with so good a design as Mr. Knight has in hand, and so many good examples as he has produced, he must take care that his laudable volumes are not counterbalanced by those of an opposite character.

Lectures on Painting and Design. By B. R. Haydon, Historical Painter; with Designs drawn by himself on the wood. 8vo, pp. 331. London, Longmans.

HAYDON has had a brave, if not a very prudent and successful struggle for the fine arts. It would probably have been better for him had he written less and painted more, and thus kept clear of our potential authorities, and displayed the full vigour of his own genius. But in the present work, whatever may be said or thought of the past, he has written well; and it will be found a valuable manual for all artists who aim at aught higher than the production of furniture-pictures, or the mediocrity of the saleable market.

Though there is of necessity a considerable division directed to anatomical or artistical details, the volume is distinguished by a bold masculine character in thought and style. There is no common-place filling up about it; no trite rambling namby-pamby, no affectation of a technical verbiage which in vain attempts to conceal want of mind in a forest of words. On the contrary, it contains much accumulated information, and not a little original thought.

On the foundation of John Bell's anatomy Mr. Haydon has securely proceeded; and his lectures have been exceedingly popular from the University of Oxford to the provincial Mechanics' Institute. And they have deserved this success; for they teach the broad principle, that Nature is the true source of all that is great in art, and that the famous masters who have stood the test of ages are only to be taken as seconds into consideration. With this we cordially agree; and we have farther to express our entire approbation of the author's manner when he dissents from received dicta. This he does not venture upon dogmatically, as if Sir Oracle; but in the exercise of sound sense and discretion, and submitting the reasons for his opinions. We trust that, with these merits, the present publication will be so encouraged as to lead to a second series of equal value; and not the less to be desired in consequence of the fresh expectations of an advance in the British school of art, which have been excited by recent movements of a promising order.

It is now only our agreeable duty to justify our praise of these seven lectures by a few illustrative extracts.

The defective education of our artists is justly pointed out as the cause of their failing to reach eminence. "What (he says) has

been the cause of this almost general ignorance in English art of the construction of every object represented, with some eminent exceptions? it proceeds entirely from the manner in which English artists get money before they get knowledge. If they have no independence, they are compelled to it; because what is the first impression on the mind of any man disposed to patronise a young painter? Let his genius be what it will for high art, for landscape, or for animals, is it not to give him employment to paint himself or the family he loves? The consequence is, a young man, the moment he finds plenty of money rewarding his efforts to please his friends, is not very likely to turn back and devote two years to acquire a knowledge of form, or the essential requisites of fine drawing. * * * Our darling is a great genius of course! he tries papa's friends, and his little cousins; gets plenty to do, grows a fine boy, raises his price, and gets a deal more! He comes to London —money rolls in—he paints a lucky hit of a lord chief-justice, a native of his town—a house is taken—a gallery built!—generals and admirals, lords and ladies, dowagers and beauties, crowd his rooms, and there is something so exquisitely delightful in this successful interchange of sympathies, that can you wonder our hero looks with contempt on Michael Angelo, who spent twelve years in dissection—while *he*, our little darling, has jumped into rank and fortune without dissecting at all! Our darling at last becomes a great man (for there is nothing excites the gratitude of a human being so much as being successfully painted); ridicules high art at the tables of the nobility, quizzes the poverty of its professors to their wives, blights by a sneer every feeling for its public encouragement at a minister's inquiry; saves an enormous fortune, and wonders why any body can have the impudence to say there is no encouragement for historical painting. I appeal to your common sense if this be exaggeration, if this be not true to the very letter, and if this species of artists have not had all the power and all the opulence for seventy years, till they have reduced high art to its present condition. * * The local cause of this strange condition was, first, the reformation in religion; and second, the civil war, which threw the art off its balance, and left it to individual caprice, by depriving it of its public patronage as an engine of state; and nothing can restore design to a healthy condition but a hearty conviction of our existing deficiencies, and an unflinching determination to root out and remedy our singular defects. The first great step in the reform of design, as applied to art and manufacture, is to be assured that the human figure is the basis of all drawing, and then to settle on such principles as cannot be shaken, a lasting and imperishable standard of the form of the most gifted being on earth, viz. man, and to ascertain what are his physical superiorities as a species, and what are his mental, as expressed by his physical figure; so that the principle may be comprehended and adopted as a leading basis for the use of all those who devote themselves to sculpture and painting, either as tutors or students. Secrets should be banished from art, as they have long been from science; be assured, if all men were always to tell all they know, if rule and principle were daily increased, still there would be something unknown and untouched, to be discovered by genius, while nature continued to shine with her accustomed splendour."

We can add nothing to the reality or force of these statements; and we only descend to a more limited view to shew how clearly Mr. H. lays down the *sine qua non* of anatomical knowledge to be any thing beyond a mere tyro in art:—

"The bones are the foundation of the form, and the muscles and the tendons the means by which he moves them, as his passions or intentions excite him. Each particular passion will excite a given number of these means, and none more or less than are requisite; the rest will remain unexcited. The bones, the things moved, and the muscles, the things moving, are all covered by skin; and the mechanism of the art is to express the passion or intention, and its consequences, by the muscles that are and those that are not influenced, and to shew the true effect of both acting beneath and shewing above the skin which covers them. When the mind is thoroughly informed of the means beneath the skin, the eye instantly comprehends the hint above it; and when any passion is wanted to be expressed, the means and their consequences (if the artist be deeply qualified) will be as complete in form, and as true in effect, as nature; and the idea represented will be doubly effectual by the perfection of the means of representation. If the character be a god, his feature and form must be built on these unalterable and eternal principles; for how can we represent a god but by elevating our own qualifications? These are the principles, then, of a great Greek standard of figure, ascertained most carefully by comparing a brutal form with an intellectual form, and confirmed by a careful reference to the greatest Greek works existing—of the finest and the only perfect period of art in the world—by the greatest and only perfect artist the world ever saw—Phidias! First, select what is peculiarly human, in form, feature, and proportion. Secondly, ascertain the great causes of motion. Thirdly, remember the opposite contours of a limb can never be the same from inherent formation, nor of a body if the least inclined from the perpendicular. And fourthly, that the form of a part varies with its action or its repose; and that all action depends on the predominance of some of the causes of motion over the others. * * * A horse was essentially, from the hand of Phidias, a horse; with his projecting eye, his flexible and breathing nostrils, his flat jaw, his restless lips! A bull was a natural bull; a dog, essentially a dog! Even down to his fish; for Martial says of his fish in an epigram—

'Adde aquam et natabunt:
Add water and they will swim.'

Could there have been a more beautiful illustration of his art, or a higher compliment? The young men whom I now address have no idea of the state of the art in the world when these works burst upon it. Will they believe that neither Michael Angelo, nor Raffaelle, nor Julio Romano, dared to represent a horse as he naturally was? Will they believe they all sunk his eye, because, after Lysippus, it was thought to be poetical to give a horse the look of a human being? was there ever such absurdity! And will they believe that all the historical painters of modern times, with one exception (Northcote), when they painted a poetical horse, notwithstanding the noble horses of our own country, were so far held in awe, by the abominable productions of the degenerated ages of antiquity (after Alexander), that they feared to make a horse like a horse, because it was not poetical! A horse with a human eye is as much a monster as a man with a horse's eye. What I say of the horse was equally applicable to the human heroic figure of the same period of art; and from these chains of absurdity, and prejudice, and ignorance of what was truly poetical, viz. nature elevated, but not perverted, the Elgin marbles have rescued us for ever."

Of Burke, respecting whom we have of late said a good deal, we are glad to see Mr. H. speaks with enthusiasm. He was a man of genius; and our author remarks—

"On all matters of art, he seems as if absolutely inspired by the spirit of Phidias. In his letters to Barry, when in Italy, and in his letter to him under the anonymous signature of R. J. L., there are principles laid down for students, which cannot be too often repeated, and which ought to be graven in golden letters over the door of every school of design in Europe. 'Remember (says Burke*) there is a great deal of mechanism in your art, in which, however, the distinctive part of the art consists, and without which the first ideas can only make a good critic, but not a painter. I confess I am not much desirous of your composing many pieces, for some time at least. Composition I do not value near so highly; but that exquisite masterly drawing, which is the glory of the great school where you are, has fallen to the lot of very few, perhaps to none in the present age, in its highest perfection. If I were to indulge a conjecture, I should attribute all that is called greatness of style and manner of drawing to this exact knowledge of the parts of the human body, of anatomy and perspective; for by knowing exactly and habitually, without the labour of particular thinking, what was to be done in every figure they designed, they attained a freedom and spirit of outline, because they could be daring without being absurd; whereas ignorance, if it be cautious, is poor and timid; if bold, only blindly presumptuous. This minute knowledge of anatomy, and practical as well as theoretical perspective, by which I mean to include foreshortening, is all the effect of labour and use in particular studies, and not in general compositions. Notwithstanding your repugnance to handling of carcasses, you ought to make the knife go with the pencil, and study anatomy in real, and if you can in frequent dissections.'—This is Burke. Again, page 53—'You must be an artist, and this you cannot be but by drawing with the last degree of noble correctness—leave off sketching. Whatever you do, finish it; let me entreat that you will overcome that unfortunate delicacy that attends you, and that you will go through a full course of anatomy with the knife in your hand. You will never be able thoroughly to supply the omission of this by any other method. Your distinction,' he says, 'between abstract ideal character and beauty and imitative art, is just; but I think you carry it too far when you depreciate the one to raise the other. So far from setting them at variance, it behoves every friend to the art to endeavour to evince the necessity of uniting them; without the power of combining and abstracting, the most accurate knowledge of forms will produce only uninteresting trifles; but without an accurate knowledge of forms, the most happy power of combining and abstracting will be absolutely useless.' 'The painter,' says Burke, 'who wishes to make his pictures (what fine pictures ought to be) nature elevated and improved, must first gain a perfect knowledge of nature as she is; before he makes men as they ought to be, he must know how to make them as they are; he must acquire an accurate knowledge of all the

* "Barry's Works, vol. i. p. 87."

parts of the body and countenance. To know anatomy will be of little use unless physiology and physiognomy are joined to it.' * * *

"To distinguish between what is good and what is bad falls to the lot of many; but to distinguish between what is barely good and what is truly excellent falls to the lot of few; and it very rarely happens that any of those few are kings and ministers, who are able and willing to reward an artist for giving up his whole time to one object, which he must do if he mean to make it truly excellent."

We reserve for another No. some instructive and observant remarks.

THE HISTORY OF SWEDEN.

[Second notice: conclusion.]

By the beginning of the sixth century we hear of the Scots, with their king Anund and his son; of the Saxons; of Russia, called Gardarike, and its ruler Iwar; of the Orkneys and Hebrides; and, of course, of Norway, Sweden, Denmark, Gothland, Upsala as a great seat of government, Finland, Zealand, and many minor districts and kings. Females not only reign, but fight as stoutly as men, and often need to be conquered with much bloodshed before they surrender their independence and submit to be the wives of those who overcome them in battle. Here is a specimen of one of these Amazons:—

"Asa, King Gudröd's queen, was like her father in temper and disposition. She first persuaded Gudröd to murder his brother Halfdan Snälle, and then she made away with Gudröd himself, that she might remain alone. But fearing revenge, she was obliged to flee back to her father; and for this ill deed received the same surname as himself, being called Asa Illrada. When Iwar heard of his father's death, he collected a great army, and passed from Scane up through Sweden, to seek revenge on Asa and Ingiald. These were at the royal estate Ränninge, on Född Island in the Lake Mälar, when they heard of Iwar's expedition. Ingiald soon perceived that he had no forces to bring against him, for the people were untrue to his interests, neither had he any place of refuge where he might be free from the fear of being attacked by any of his numerous enemies. He and his daughter, therefore, in their desperation, took the determination that, when they had intoxicated their whole court, they should fire the castle, and destroy all in it, themselves included, at the same time. This happened about 600 years after Christ. Such was the end of King Ingiald Illrada, who was the last king of the Ynglinga dynasty in Sweden. His son Olof fled to Wermeland; and laying open the forests, was called Trätelja, or Woodcutter. His descendants were kings in Norway, and many mighty families and memorable men trace their descents from him."

Some of the battles appear to be described on the Homeric model; for instance that of Bragwalla, in 740:

"When all was ready the chiefs caused the war-horns to be sounded; on which the two armies uttered a great shout, and so advanced on one another. A sharp and memorable conflict now followed; and the old sagas relate, that nowhere in the north have so many chosen and picked men striven together. When the battle had raged awhile, Ubbe, the Friesländer, advanced in front of King Harald's troops towards the enemy; in the front of King Ring's tribes advanced Radwald the wise in council, and Ubbe turned to confront him. Then between these two stout-handed men a hard battle took place, in which many desperate blows were dealt and returned; but it ended by the death of Radwald. Then Ubbe cut down the champion Tryggve, who stood next to Radwald. When Adil's sons from Upsala saw this, they turned both upon him; but such a remarkable warrior was he that he slew them both, and the third Yngve in addition. When King Ring saw this he shouted, that it was a shame to let a single man so exalt himself over a whole army; and, 'where was Starkotter now, who never feared before to step foremost in the strife?' Starkotter answered, 'This is a hard trial, and victory will be difficult for us now, my lord. Notwithstanding, I will not fall back.' Saying this he advanced towards Ubbe, and they exchanged many mighty blows. Finally, Starkotter gave Ubbe a very terrible wound; but he had already received six himself, so that he thought he had never before been in such a terrible strait. Now the troops pressed upon them on both sides, and separated these two champions. Ubbe cut down another warrior called Agnar; and then seizing his sword with both hands, cut a broad path right through Ring's troops, and was now bloody up to the shoulders. Behind Ring's army stood the inhabitants of the Telemark in Norway, whose chief art was using the bow and arrow; which the rest of the army holding in small esteem, they had been placed in the rear. When they perceived Ubbe advance through the army towards them, they said among themselves, 'Now is the time for us to shew that we are also brave men, and not so weak as the others esteem us to be; and we shall make this man the aim for our arrows awhile.' Hadder Horde, and Hroallder amongst them, were such good marksmen that they shot Ubbe through with four-and-twenty arrows. But he never lost courage, and defended himself valiantly till he fell down dead. He had overthrown six warriors and sixteen other men, besides having grievously wounded eleven others of note. Veborg, the Amazon, now advanced against the Swedes, and slew the champion Sote. After this she met Starkotter, and they fought; but she was so active and supple, that she gave him a blow which sliced the flesh off his cheek and chin. Torkil Djerfwe came up at the same moment and hewed her down; but Starkotter put his beard in his mouth, and held it with his teeth, thus retaining the loose piece of flesh, and he was now very wrath. He burst suddenly into the Danish force, and cut down the warriors Hake, Ella, Borgar, and Hjorter, one after the other; and then rushed towards Ursina, the Amazon, who bore King Harald's banner. She then said: 'Certes, the rage of death has now come upon you, and your last hour is surely at hand.' 'First, thou shalt drop the king's banner,' said Starkotter; and with these words he cut off her left hand. At the same moment Brae, the warrior, seized it; but Starkotter cut him down, and other two, Grepe the Old and Hate; but he received himself many grievous and sore wounds. When Harald saw the great slaughter amongst his troops, he threw himself on his knees in his chariot, being unable to stand, and took a short sword in each hand; he then caused the chariot to be driven into the thickest of the fight, hewing and striking on both sides, in this manner killing many; and he was considered very manly, and to have done great deeds for his great age. Finally, his own general, Brune, struck him with a club on the helmet, so that his head was cleft, and he fell dead out of the chariot. When King Ring saw the chariot empty, he understood that King Harald was slain; he therefore caused a cessation of arms to be blown on the trumpets, and offered the Danish army peace and quarter, which they accepted. The next morning Ring caused the field of battle to be carefully searched for King Harald's corpse, which was not found till the middle of the day, under a heap of slain. Ring caused it to be taken up, washed, and honourably treated according to the custom of those times, and laid it in Harald's chariot. A great mound was then raised; and the horse which had drawn Harald during the battle was harnessed to the car, and so the royal corpse was drawn into the mound. There the horse was killed; and King Ring caused his own saddle to be brought in, and gave it to his friend King Harald, praying him to use it in riding to dwell with Odin in Walhalla. After this he caused a great funeral feast to be celebrated; and at its conclusion begged all the warriors and chief men who were present, to honour Harald by gifts and ornaments. Many precious things were thrown in, large bracelets, and excellent arms; after which the mound was carefully closed and preserved. And King Ring remained sole governor over the whole kingdoms of Sweden and Norway."

The burial of Ring's saddle with the dead Harald is an interesting fact, and particularly at present, when the recent excavations of barrows in Kent have excited so much public attention. In relation to the same practice, and to some of the graves being found empty, the following is a very curious notice. But we must tell the whole romantic story:—

"King Ring had gone down to Wiken, the gulf between Sweden and Norway, to settle some disputes between his tributary kings; on which occasion a great sacrifice was made, which was numerously attended,—amongst others, by King Alf's daughter, from Jutland, a princess who, for her great beauty, was called Alfsol, or Sun. Notwithstanding his great age, Sigurd Ring fell in love with her, and asked her to wife, though the gods had pronounced against it at a sacrifice. But Alfsol's brothers, Alf and Inge, refused to give 'so fair a maid to such a withered old man.' Ring was very angry that his own subjects had ventured to give him such an answer, and therefore denounced war on them after the conclusion of the sacrifice. Alf and Inge were brave men; but still they feared King Ring's superior might, and therefore gave Alfsol poison, that she might not fall into his hands. They then advanced against the king; but the fortune of the day soon turned against them. Alf was cut down by Ragnar, who was now with his father, and got in consequence the name of Alfsbane. Inge fell also; and their troops fled. Sigurd, who had himself been severely wounded in the battle, ordered Alfsol to be sought for; and when he only found her corpse, he determined to live no longer. He therefore commanded all the dead bodies to be carried into a ship, seated himself by the rudder in the stern, and laid Alfsol at his side. He afterwards caused the ship to be set on fire with sulphur and pitch, hoisted all the sails, and steered with a steady wind out to sea, saying 'that he would come with magnificence as befitted a mighty king to Odin.' When he got without the shores, he ran his sword through his body, and so fell dead over the corpse of his beloved Alfsol. The ship drove out to sea, and perished there; but Ragnar caused his men to raise a great mound on the shore."

Before his own death, we have a singular exploit of this Sigurd in killing a Norwegian giant:—

"A violent battle took place, for these brothers conducted themselves very valiantly, and

had also a huge man with them, more like a giant than a man, who broke in on the Gjuking's army and killed the horses and their riders around him, so that none could withstand him. King Gunnar, the eldest of the Gjukings, saw this would not do, and begged Sigurd to advance against that man-slayer. Sigurd Fafnisbane did so; and asked who he was. 'I am Starkotter, Storwerk's son, of Norway,' answered the great man. 'I have heard thee spoken of,' answered Sigurd, 'but generally not to thy advantage; and therefore thou oughtest not to be spared.' 'Who art thou,' retorted Starkotter, 'who art so great in words against me?' 'I am called Sigurd,' answered the other. 'Is it thou who art named Fafnisbane?' asked Starkotter, again. 'It is even I!' answered Sigurd. Then Starkotter was afraid, and hastened away; but Sigurd slung his good sword 'gram' after him, so that the handle struck Starkotter on the cheek-bone, and two back-teeth flew out. This was considered a very disgraceful blow for Starkotter; he fled out of the battle, and the whole of the northern troops with him. The Gjukings went home, and were permitted to remain there in peace. It was long a tradition afterwards, that these back-teeth or grinders of Starkotter's were so large, that one of them was used as the bell-clapper in one of the church-steeples of Denmark."

Teeth instead of tongues for clappers, is an original notion; but we will now conclude with a fearful account of the revenge taken upon the English king Ethelred by a son of Ragnar, whom that king had taken prisoner and thrown into a pit of serpents, to be bitten to death.

"The brothers made their attack, and with such success, that they soon dispersed Ethelred's troops and took himself prisoner. Iwar had not fought against him for his oath's sake; but he now advanced, and bid him remember what death he had made their father suffer. By Iwar's orders, therefore, an eagle was drawn upon Ethelred's shoulders, which was done by cutting the flesh away from the back. Salt was then thrown into the wound, and the ribs cut from the back-bone and bent outwards like the wings of an eagle, after which the lungs were drawn through this wound. Ethelred was thus sorely tortured and tormented before he died, and the brothers then thought that they had amply revenged the death of their father Ragnar."

We have to observe upon some errors in style, such as "three first;" and typographical oversights, such as "Tora" for "Kraka," p. 104; and a few discrepancies which rather invalidate the precise truth of the history (though, we may allow, incredible enough without); but, upon the whole, from foreign hands, it is generally very correct, and does credit to all concerned.

Young Love: a Novel. By Mrs. Trollope. 3 vols. H. Colburn.

THE talent of Mrs. Trollope is fully displayed in this novel. It possesses her acuteness of observation on society and individual character; the former presenting a curious *mêlée* of life, and the latter a gallery of distinct and well-drawn portraits; and there is often a vivacity, and never a weariness, in incident and style, which qualities carry the reader along with the stream, always amused if not interested; and so he gets to the end without much objection to certain imperfections which challenge more critical observance. Among these we may note the exaggeration of features, which make the leading personages less natural than we could wish; the putting into language what finer appreciation would confine to thought,—for people in the world do not go about directly and *vivâ voce* telling even their accomplices in evil the nature and extent of their bad-heartedness and vicious intentions; and (what we most disapprove) the whole profligate story of a convenient London lodging-house, which is rather *un peu forte* from a female pen, and not very fit for the purer portion of female readers.

Such are the most obvious merits and demerits of this work, the cleverness of which is worthy of the author's repute and skill as a practised writer. We might quote a hundred traits and touches which give proof of this, and infuse a high degree of spirit into the whole narrative. We could also shew up the husband-hunting Celestina Marsh, the beautiful and worthless Amelia Thorwold, the fond Mrs. and uxorious Mr. Stephens, the hero himself, the heroine, Col. and Mrs. Dermont, and, indeed, most of the *dramatis personæ*, as very able impersonations (with the drawback, as we have said, of being somewhat exaggerated); but doing either, or attempting to offer any long extract, by way of illustration, would infringe so much on the gratification of readers in making these discoveries at the fountain-head, that we now close our remarks, and commend the publication as an entertaining specimen in Mrs. Trollope's popular manner.

Chronicles of the Seasons. Vol. IV. Pp. 392. London, J. W. Parker.

COMPLETES the year and the work with the three winter months, October, November, and December, illustrated in a manner similar to that which rendered Hone's *Every-day Book* so worthily popular. It is desultory reading, but a collection full of attractive subjects.

ARTS AND SCIENCES.

THE BRITISH ASSOCIATION (YORK).

TUESDAY.

SECTION A.—(*Mathematical and Physical Science.*)

1. Herschel (Sir J.), report of the committee of magnetical and meteorological co-operation; and 2. Report of the committee on the nomenclature of stars.

3. Brewster (Sir D.) on the illumination of the intersection of black lines; 4. On crystals in cavities of topaz, which are dissolved by heat, and re-crystallise on cooling; 5. On the causes of colours in precious opal; and 6. On the white rings in certain specimens of calcareous spar.

7. Phillips (Prof.), additional experiments on rain collected at different heights above the ground; and 8. Simultaneous barometric observations in the north of England.

9. Howard (L.) on the mean year or solar variation of the barometer in the climate of London.

10. Herschel (Sir J.), contributions to actinochemistry, and on the amphitype, a new photographic process.

11. Hunt (R.) on the influence of solar rays on chemical and electro-chemical action.

12. Mayes (Serg.), meteorological observations at Aden, in Arabia.

13. Ronalds (—), report on the electrical observatory at Richmond.

14. Robinson (Dr.) on captive balloons.

15. Whitworth (—) on an instrument for measuring minute bodies.

1. The grandest feature of the proceedings of the British Association (of the practical and steady progress for the benefit of science, we mean) has been for the last two or three years, and now is, the widely-spread co-operation to carry on magnetical and meteorological surveys, and simultaneous observations at numerous stations. The committee for the management and superintendence of this great work, and for the reduction of the observations, consists of Sir John Herschel, Dr. Whewell, the Dean of Ely, Prof. Lloyd, and Col. Sabine. The first and last two have been the active members. Prof. Lloyd, in conjunction with Col. Sabine, did much for the early establishment, perfecting instruments, laying down rules, &c. &c. Col. Sabine has been indefatigable throughout, discussing the records and developing results; witness the comparison of the Toronto and Prague observations (*Lit. Gaz.*, No. 1446). The office of reporter of annual progress has been ably filled by Sir John Herschel. Of this our general readers have had ample proof from year to year; and, to convince those that are casual of this, we need only refer to the report (No. 1) of this year, the first part of which was given in our No. of the 12th instant, and the conclusion of which follows:

Magnetic Surveys and Itinerant Observations in progress or about to be undertaken.—North American Survey. The great interest which attaches to the survey of the difficult and inhospitable country undertaken by Lieut. Lefroy will render a sketch of his proceedings, so far as they are at present known, especially acceptable. By letters written by him from York Fort, in the autumn, it appears that he had proceeded thence from the Lac de la Pluie—a distance of about 500 miles in the direct course towards the point of perpendicular dip—during the whole of which journey he had found the total intensity to *diminish* progressively. Later accounts have been very recently received from him from Athabasca, where he was to pass the winter, and whence he originally contemplated retracing his steps by a more inland route to the lake above mentioned on his way to Red River.

At the date of those accounts, Mr. Lefroy was making hourly observations throughout the twenty-four hours, with one assistant, observing the changes of the declination, the horizontal force and the inclination, the declination and bifilar magnetometers, and the induction inclinometer. He will probably complete four, or, perhaps, five months' hourly observations before leaving Athabasca. After leaving, he says, "My plan is to go down to Mackenzie River, in March, on snow-shoes; when there, there are two prospects—one is, to return in May to Slave Lake, and thence come here by the very first navigation; the other, to Great Bear Lake, and return with the Mackenzie River barges, which do not leave Fort Simpson until near July. In either case the next step is to ascend Peace River and cross by Lesser Slave Lake to the Saskatchawan; but if I take the latter course, I cannot expect to reach Red River before the very end of September, which will endanger my return to Canada by open water, and wholly preclude the idea of returning by Moose Factory—the latter is not of much consequence; as, if I return to this country, it will be perfectly easy to go by Moose and yet reach Lake Winnipeg in time for every thing. A little, therefore, will depend upon the season; if the spring promises to be a very early one, and allows the Mackenzie River boats to come off before their usual time, I shall, perhaps, venture on the latter; at present I am most inclined to the former: in either case I shall get a few weeks' transportable observations in a more northern latitude, which is desirable."

Arrived at Red River, he will find instructions to observe, if possible, the decrement of magnetic intensity from its maximum in the Rainy Lake in a westward direction; thus completing a system of lines radiating out from the maximum in the northern, eastern, and western directions (the eastern line being already secured). Dr. Locke's observations,

which are now printing at Philadelphia, will furnish the fourth line. The full development of these important features, which will establish in a very approximate manner the central point of the isodynamic ovals in this quarter, must await the assemblage and discussion of the whole mass of materials in process of collection.

Completion of the Antarctic Survey.—The contributions of the officers of the surveying-expedition in the hydrographical department of the Admiralty have already done the greater portion, and promise to leave nothing to be desired in respect to that part of the ocean comprised between the equator and the 50th degree of south latitude; so that it might, at all events, have been confidently expected that in a year or two from the present time the sole remaining desideratum of importance unprovided for would be that part of the higher parallels not traversed by the antarctic expedition, viz., the region comprised between the meridian of Greenwich and the 130th degree of east longitude, and extending southward to the 65th parallel of latitude.

The survey of this portion of the Antarctic Ocean, however, has been undertaken by Lieut. Clarke of the Ordnance Magnetic Observatory at the Cape, who, having completed his task of performing a magnetic survey of the Cape colony, zealously volunteered his services to that effect, and at the instance of the Royal Society has been liberally furnished by the Admiralty with the nautical means of executing his design, a vessel having been taken up and placed at his disposal for that express purpose, under the command of Lieut. Moore, one of the most valuable magnetic observers of Capt. Ross's expedition.

Proposed Survey of the Eastern Archipelago and China Seas.—Animated by a kindred spirit, Lieut. Elliott of the East India Company's Magnetic and Meteorological Observatory at Singapore, has volunteered a survey of the Malayan Archipelago, proposing to visit Malacca, Penang, the Tenasserim province, and Sumatra; to undertake a minute survey of Java; to procure determinations in Timor and Borneo; to attempt the Philippines; and to observe at all the open ports in China. The especial importance of such a series of observations need hardly be insisted on; and although the East India Company have not felt themselves (in this single instance) justified in complying with the suggestion—no doubt for reasons of the most valid nature, and arising, probably, out of the peculiar political relations of some of the countries proposed to be visited—your committee have considered that they would not be doing justice to the energy and devotion of Lieut. Elliott, or to his discernment of what would be scientifically desirable in originating the proposition, were they to forbear making mention of this report.

Continental Surveys—Austria, Sweden, &c.—During the last summer, M. Kreil, director of the Magnetic Observatory at Prague, travelled over a considerable part of Bohemia making geographical and magnetical determinations at many points, an account of which will be found in the sixth delivery (*heft*) of M. Lamonte's *Annalen*. The same distinguished observer has more recently applied to the Emperor of Austria for the authority and means to travel over and execute a magnetic survey of the whole empire of Austria—an application which his majesty has liberally acceded to, and granted the requisite funds; so that in a few years we may hope to be put in possession of a survey of that great monarchy, equalling or excelling what has been done for any other great portion of the European continent.

M. Angström, astronomer of Upsala in Sweden, leaving Munich in the early part of the season, is understood to have undertaken a series of observations with a magnetic theodolite at all the principal stations, on his return to Upsala; and M. Lamonte proposes to connect his own observatory at Munich with London by a similar chain of observations of the magnetic constants at Stuttgard, Tubingen, Heidelberg, Mannheim, Mayence, Cologne, Aix-la-Chapelle, Brussels, and other places.

Itinerant Observations (not in the nature of formal surveys) of Naval Observatories, and other local determinations.—Portable magnetometers, accompanied with Lieut. Riddell's instructions for their use, have been sent not only to the fixed observatories, but also to Sir E. Belcher in China, Capt. Blackwood in Torres Straits, Capt. Graves at Malta, and Capt. Bayfield in the St. Lawrence. Two sets have also been ordered for the American coast-survey, the one to be used by Professor Bache, the other by Professor Renwick. The officers of the Newfoundland corps are also similarly provided. In all these cases, the instruments previous to their despatch have been carefully examined at Woolwich, the constants of temperature, &c. determined for each magnet, and a proper supply of blank forms for entry, &c. work of observations adjoined. And we have reason to expect that term-observations and absolute determinations will be received from all the quarters above enumerated. Valuable contributions of this nature from Captain Blackwood have already come to hand.

Publications relating to Terrestrial Magnetism.—Among the more generally useful and practically important publications relating to this science must be considered the elaborate and admirably arranged and digested work of Lieut. Riddell above alluded to, entitled "Magnetical Instructions for the use of portable instruments adapted for magnetic surveys and portable observatories." Full and complete instructions of this nature, adapted to the species of instruments now become of universal or nearly universal employment, whether intended for deferential observations or absolute determinations at fixed stations, or for magnetic surveys, and other local operations, had long been greatly wanted, and in fact great inconvenience had been experienced on all hands owing to the want of an authentic digest of the kind, adapted to the present advanced state of the subject. It was reasonable to expect that in a subject so new as magnetism, some of the instruments and methods by which the investigation was in the first instance proposed to be carried on should have proved inadequate to their purposes. Such has been found to be the case, particularly in reference to that highly important branch of the inquiry, the secular changes. The indisputable evidence of inadequacy, the contrivance of instruments or methods to be substituted, the execution of those instruments, their trial and proof, and their subsequent transmission to the stations, with full directions for their use, is all a work of time, and *pro tanto* has tended to diminish the period for which the observatories can be considered to have been thoroughly effective for their proposed objects. All this proved an anxious as well as a very laborious part of the occupation of the ordnance establishment, of which the strength was calculated solely for the duties of reduction and publication.

There being no head-quarter observatory, where such questions would be examined and deficiencies supplied, a large portion of the attention of the superintendent of the establishment has been necessarily occupied in this work. The work in question will shew the labour that this has occasioned: it occupied, indeed, almost exclusively for more than a twelvemonth the thoughts and time of Lieut. Riddell, whose previous employment as director of the Toronto Observatory for the first year of its establishment gave him a peculiar qualification for the task. It is satisfactory, however, to be assured by the results which are daily arriving from the observatories, that it has been time well bestowed; and we may pretty confidently say, that assured secular determinations will date from the commencement of the present year at all the observatories under the ordnance superintendence. One consequence which may fairly be attributed to this work, and to the facilities thereby afforded for the acquisition of a perfect knowledge of magnetometry, has been, the greatly increased demand for magnetic instruments since its publication, which exceeds the power of the opticians chiefly conversant with their construction to meet.

The valuable *Annalen* published by Dr. Lamonte are continued, and the sixth and seventh numbers (for 1843) have reached the committee. They contain the magnetic term-observations for 1842 observed at Milan, Munich, Prague, and Kremismunster; M. Weise's observations at Cracaw for 1841 and 1842; the result of M. Kreil's magnetic determinations in Bohemia already mentioned; the magnetic perturbations observed at Munich in 1842; and a vast collection of valuable meteorological contributions from all parts of Europe, of which the great length to which this report would thereby be extended alone prevents us from presenting an analysis.

The publication of the Russian observations, whether magnetic or meteorological, at the stations, Petersburgh, Catherinenbourg, Bogoslowsk, Lougan, Zlaseaste, Barnaove, Nertchinsk, Rasan, and Pekin, is complete up to the end of the year 1841, and forms indeed a magnificent contribution to the service of science, worthy in every way of the greatness of the empire which has produced it, and reflecting the highest credit on the indefatigable exertions of M. Kuppfer, the superintendent of the Russian observatories. The observations from Pekin are meteorological only, and are of course of great interest, though affected in some points (especially in what relates to the march of the hygrometer) by the social peculiarities of so vast a metropolis, such as the practice of copiously watering its streets in the summer, &c.

The third volume of the "Magnetic and Meteorological Observations at the Prague Observatory," under A. Kreil, has also appeared, and has been received by your committee. The meteorological observations in this volume, as well as those in Lamonte's *Annalen*, and the records of the Russian observatories for several years, are at present undergoing collation by Mr. Birt, with a view to the tracing the progress of remarkable atmospheric waves in a mode presently to be more particularly referred to.

"The Annals of the Royal Observatory at Brussels," vol. ii., recently published under the direction of M. Quetelet, is a most valuable contribution to meteorological science, containing the assemblage of such observations for the years 1837 to 1840 inclusive, in details for Brussels and in summary for Alost and Ghent, together with determinations of the magnetic declination and dip for the same period, those of the declination for 1840 being diurnal, at four hours daily.

The magnetic term-observations for 1842 observed at Brussels are printed in the fifteenth and sixteenth volumes of the "Memoirs of the Royal Academy at Brussels." Those volumes contain also the meteorological horary observations made at the summer solstice and both equinoxes of 1842 at no fewer than forty-two principal European stations, in continuation of the series of equinoxial and solstitial observations in which M. Quetelet has taken an especial interest. These interesting and important observations have subsequently, by the praiseworthy exertions of M. Quetelet, seconded by the zeal and interest of his numerous correspondents, been extended to no fewer than eighty stations. Their publication has been continued or provided for to the end of 1843; but, owing to some difficulties which have unfortunately since interfered, and which are understood to have thrown a serious obstacle in the way of their future publication by the Academy, it is greatly to be feared that the course of this series of valuable records may be suspended or abandoned, to the great regret of every meteorologist.

The magnetic and meteorological observations made at the Royal Observatory at Greenwich, under the direction of the astronomer royal, during the years 1840 and 1841, have been printed by order of the Admiralty in full detail, uniformly with the astronomical observations made at that great national establishment, but in a distinct volume; and it is understood that the subsequent observations will be presented to the public in like liberal form. The volume is prefaced with a valuable introduction from the pen of the astronomer royal, describing every part of the apparatus and the mode of using it. One important characteristic of this station as it now exists is the apparatus for observing the atmospheric electricity, a department of meteorology of equal importance and difficulty, and which has hitherto been very inadequately studied.

The diminution of magnetism in steel needles by time as well as by temperature has been made the subject of a short but valuable treatise by Prof. Hansteen, which, although printed in 1842, has only come to our knowledge since the date of our last report. The inquiry into the temperature-corrections, being matter of *experiment*, is easy in comparison with that of the changes effected by time, which are matter of pure observation, and partake therefore of all the disadvantages which affect purely observational sciences. The conclusion which M. Hansteen draws relative to this part of the subject is, that "*the decrements of intensity form a geometrical series when the time increases arithmetically, and that the magnetic moment continually approaches to a fixed limit;*" to attain which of course an infinite time is necessary, but which, practically speaking, would appear to have been approached with a high degree of approximation, at least for the great majority of cases (7 out of 9) which have formed the basis of Prof. Hansteen's conclusions, within two or three years from the epoch of their magnetisation, and in some instances much more speedily, according to the hardness of the steel and other causes.

Meteorological department.—Discussion of Meteorological Observations. At the last meeting of the British Association, Sir J. Herschel, acting as a committee for the reduction and discussion of the meteorological term-observations for 1835, 6, 7, 8, reported, among other matter, that by the aid of these observations it had proved practicable in specified instances to trace the progress and to assign the magnitude, direction, and velocity of atmospheric movements in the nature of waves over nearly the whole of Europe, and that in a manner which if pursued further could hardly fail to afford real and valuable additions to meteorological science; being obliged, however, from the pressure of other occupations, to leave the inquiry at this point, Mr. Birt volunteered to continue it under the auspices of the Association, and was accordingly added to this committee for that purpose. The progress made by him in it will be appended in his own words, as part of this report, accompanied with a letter explanatory of his views on the subject, and with models of certain atmospheric waves in several successive states of their progress over Europe, which will be submitted to the Physical Section for their inspection.

In the discussion of meteorological observations, the most serious obstacle, and that of the most formidable and repulsive character, is the enormous mass of calculation (necessitating transcriptions, &c.) required for their adequate reduction and preparation for the uses of the theorist; while on the other hand the method of inductive inquiry which seems most applicable to the subject in its present state (the "method of curves," as it has been termed by an eminent writer on inductive science), requires the observations, when reduced, to be, in a great variety of cases, projected on paper in the form of diurnal, monthly, or annual curves. On the other hand, such is now the perfection of every description of mechanical workmanship, and such the profusion in which the talent of mechanical contrivances is actually found to be disseminated among practical and theoretical persons in every class of life and in every line of human research or business, that the time is clearly arrived when arrangements of mechanism may be safely relied on to supersede the necessity of an immense mass of laborious and exhausting penmanship and computation. Self-registering instruments henceforward will prove yearly more and more the main dependence of meteorological inquiry, and indeed of inquiry in every department of science, in the same phase of its progress; and their improvement, simplification, and adaptation to the purposes of attaining mean results on the one hand, and on the other the drawing out of curvilinear projections (the "true collective instances" of the Baconian philosophy) in a state ready for immediate use, ought to be regarded as one of the most important, perhaps the most important, point to which mechanical ingenuity, guided by scientific knowledge, can be directed. The great object which ought to be kept steadily in view is, so to dispose the apparatus that *corrected results* shall be registered if possible, and if not, that the corrections to be applied shall be registered *at the same instant and on the same scale* with the observed elements, so that they can be readily applied to the projected curves by mere mechanical or geometrical super-position. In this point of view, a barometer which will register its readings *corrected* for temperature would be of the utmost value. This does not appear beyond the reach of a moderate expenditure of thought;* and your committee would earnestly recommend it to the consideration of artists.

Meanwhile, it is with satisfaction that we refer to two constructions of self-registering barometers which have recently come to our knowledge. Mr. Bryson's, recently published in the fifteenth volume of the "Transactions of the Royal Society of Edinburgh" (to which apparatus he has since added a self-registering thermometer for the corrections, and a self-calculating disc attached to the reader, which exhibits the monthly means without calculation). The other instrument of the kind in question is the invention of M. Kreil, director of the observatory at Prague, who terms it a barothermometrograph, and who has also constructed a similar instrument, the thermohygrometrograph, for registering hygrometric indications. An instrument of this kind is now on its way to this country, having been constructed under the immediate superintendence of its inventor.

Finally, your committee beg to recall to the recollection of the Association, that the duration of the magnetic and meteorological observations now in progress will cease with the year 1845, and that therefore it will be highly necessary that before that time, and, in fact, if possible, at or before the next meeting of the Association, the important question should be seriously taken into consideration, whether any endeavour ought or ought not to be made to obtain from the several governments which have supported the existing observatories, further support—a very grave question, which has been already distinctly brought under the notice of your committee by one of their most active coadjutors, M. Kuppfer, director of the Russian magnetic observatories, and which it is highly proper should be considered in every point of view with an earnestness commensurate both to its scientific importance and to the large and liberal manner in which that support has been already granted.

2. Sir J. Herschel's report (No. 2) stated that the three principal catalogues, the British Association Catalogue, Lacaille's Catalogue, and that of the *Histoire Céleste*, revised and prepared by the master-mind of our late intelligent associate Baily, compared also with the celestial charts of M. Argelander, are in the course of printing; and that a summary of all previous similar labours will be appended to the publication.

3, 4, 5, 6. Sir D. Brewster's were four experimental papers. The first accounted for the appearance of white spots at the intersections of black lines by an affection of the sensibility of the retina, from the bright light of the white squares; the complementary colour of the black bars, a nebulous white, is seen along the whole bars, but, because of the affection above mentioned, with the greatest intensity at the intersections, and hence the bright spot.

Prof. Airy had observed on a piece of cotton similar appearances, but the spots black, the lines being white and the squares black.

The second described the remarkable phenomena the title above announces. The cavities of the topaz contain, besides two fluids, soluble crystals, which gradually dissolve under the influence of heat, commencing at the angular portions; on cooling they recrystallise, but often in an altered form. The third attributed the colours of the opal, hitherto ascribed

* An approximate compensation by the counteracting pyrometric expansion of an invariable length of mercury or lead, is easily accomplished; but this would be subject to occasional error amounting to nearly one-fifteenth of the total amount of the temperature-correction. The pyrometer compensating column must be variable in its length in the ratio of the uncorrected length of the mercurial column measuring the pressure. If, however, the instrument be mounted in a situation of which the variations of temperature are very slight, as in a cellar, or at the bottom of a mine-shaft, or even a well (which, as there is no occasion to approach it except for the purpose of renewing the cylinders, would be liable to little objection), the error thus entailed would be so reduced in effect as to disappear for any but the very nicest purposes. Indeed, the barometer part of the apparatus might be buried in the earth, allowing only enough access of air to propagate the pressure, the registering apparatus only being above ground.

to fissures in the gem, to rows of minute pores. The fourth explained the white rings of calcareous spar to be phenomena of the same character, and to be due to the interception of excessively small tubes or pipes parallel to one of the planes of the rhomb.

7. Prof. Phillips's communication on rain-gauges, and the quantities of rain collected in them at different elevations, was of considerable interest, suggested caution in conducting similar observations, and shewed that the data so collected hitherto had not been obtained by a method sufficiently delicate. From objections raised to previous results, local eddies, currents, &c., when gauges were fixed on high buildings, he had caused to be placed, in his garden, gauges on poles at elevations of eighteen inches, three feet, six, twelve, and twenty-four feet. The results obtained during unequal periods of the years 1843 and 1844, from Jan. 9th to Oct. 14th, and from Jan. 1st to Sept. 2d, were, that the gauge nearest the ground collected the most, and the highest the least, with a gradual diminution in the intermediate ones. This was not the case always with a single observation or even a succession of observations; sometimes the three feet, sometimes the twelve feet, and sometimes another gauge, received the greatest quantity; but the result of a long series was as above stated. For the periods of 1843 and 1844 that Prof. Phillips observed and had his gauges recorded, the relative amounts in inches, diminishing to the most elevated, were as follow:

Elevation.	Rain collected in 1843.	1844.
18 inches . .	15·619 inches . .	10·940 inches.
3 feet . . .	15·608 „ . .	10·690 „
6 „ . . .	15·549 „ . .	10·640 „
12 „ . . .	15·419 „ . .	10·620 „
24 „ . . .	14·618 „ . .	9·540 „

This singular correspondence will be tested by farther experiments.

8. The simultaneous barometric observations, which had been discussed by Prof. Phillips, were conducted at several stations in the north of England — Birmingham, Sheffield, Hull, Shields, Selby, York, Scarborough, Whitby, and Kendal. One of six diagrams was exhibited. It shewed a remarkable general conformity, with some slight differences. The whole of the reductions, however, had not been made; and Prof. Phillips promised a farther communication next year.

9. Mr. L. Howard stated his views, or rather the results of his observations, for several years. He considers the climate of London may be divided into a cycle of eighteen years, nine of good and nine of bad weather. Beautiful diagrams, shewing the symmetry and coincidence of the curves, charts of elevations and depressions, instances of coincident storms, reduced observations of daily winds, &c. were displayed to prove the development of systematic atmospheric changes. Mr. Howard's published works contain most of these, and his views in detail.

10. Sir J. Herschel's communication had been previously read in Section B, where we have noticed it. There appeared no reason whatever for its second reading in this section, nor for the paper of Mr. Hunt (11), which appeared in Monday's proceedings of the Chemical Section.

12. The meteorological observations at Aden, arranged in monthly tables and curves of the thermometer, hygrometer, &c. evinced the great industry and perseverance of a sergeant in the 17th regiment stationed there.

13. Mr. Ronalds' report formed a volume of most clear and admirable registries. It was too long, however, to read; and Mr. Ronalds was too unaccustomed to address a numerous assembly to give a verbal account.

14. For the experiments with captive balloons all the arrangements excepting one were made. This was the preparation of a single line with wires wormed in as a substitute for the intended separate conducting wires. Any twisting or interference of the conductors would be thus avoided; and the balloons are consequently to be elevated 3000 instead of 1000 yards.

15. The instrument described and exhibited by Mr. Whitworth we have already noticed in Section G, Monday.

SECTION B.—(*Chemistry.*)

1. Herschel (Sir. J.) on the amphitype, a new photographic process.
2. Wood (Dr.) on photography.
3. Talbot (F.) on photography.
4. Hanel (Dr.) on etching photographic plates.
5. West (—), an account of experiments on heating by steam.
6. Jordan (C. J.) on increasing the intensity of the oxy-hydrogen flame.
7. Lucas (W.) on the alteration of the structure of iron.
8. Gibbes (Sir G.) on the constitution of matter.
9. Rigg (R.) on the formation or secretion of carbon by animals, the disappearance of hydrogen and oxygen, and the generation of animal heat during the process.
10. Muspratt (Dr. S.) on the supposed formation of valerianic acid from indigo, and upon the acid which is produced by the action of potash on lycopodium.
11. Kemp (—) on an occasional source of error in Well's method of estimating nitrogen.
12. Smith (Dr.) and Leigh (—) on the action of nitric acid on naphtha.

The four photographic communications were read and then discussed.

1. The exact process for the amphitype was not given, but it was stated that papers prepared with the ferro-tartrate or ferro-citrate of mercury or lead, after the negative picture was brought out, were to be immersed and allowed to remain for several weeks in a bath of pernitrate of mercury and water, the latter in excess. The image would fade away; and then the paper should be well washed in warm water and dried, when by passing a warm iron over it, a positive picture comes out. It is this production of first a negative and then a positive image by the single action of light that constitutes the amphitype. In another process the ingredients employed by Sir J. Herschel are silver and ferro-tartaric acid. The negative may be changed into a positive picture by exposure to light and then by removing it into the dark. If the back of the picture be exposed to sunshine for a short time, when the actino-chemical action (actino-chemistry, the new name proposed for changes in bodies from exposure to solar influence) is fresh on the other side, and then taken into the dark, a positive picture will be developed on it, fully complementary to the negative one on the face of the paper. The specimens of positive pictures shewn were not very perfect.

A long discussion followed, in which Mr. Fox Talbot, Mr. Grove, Dr. Daubeny, and Mr. Hunt, took part; the result of which was, that in deference to the strong opinions expressed by the three former in regard to the terms tithonicity, energia, &c., Mr. Hunt withdrew the name energia and energiatype, which had been hastily introduced by him, we thought, and without sufficient grounds. We rejoice at his straightforward withdrawal. The more science is disenthralled from such terms as tithonicity, energia, and even actinism, involving suppositious principles, or ideas not sufficiently based on facts, the better.

2. Dr. Wood's process was a slight variation of Mr. Talbot's process (the calotype,—another questionable name, though now accepted some years), the iodide of iron being used instead of the iodide of potassium.

4. Some exceedingly good specimens of engravings, or rather impressions of etched Daguerreotype plates.

The other papers on the list, though numerous, brought forward nothing of public interest; and, in some instances, only suggestions or incomplete results.

SECTION C.—(*Geology and Physical Geography.*)

1. Moncur (D.) on a singular instance of a nail occurring in sandstone.
2. Rooke (J.) on the relative age and true position of the millstone grit and shale, in reference to the carboniferous system, in the British Penine chain.
3. Allsop (J.) on the toadstones of Derbyshire.
4. Eddy (Capt.) on the stratification of Grassington Moor.
5. Murchison (R. I.) on the palæozoic rocks of Scandinavia and Russia, particularly as to their base or the lower silurian rocks.
6. Forchhammer (M.) on the conversion of fucoid shale into gneiss, communicated by Mr. Murchison.
7. Moro (Signor G.) on the communication between the Atlantic and Pacific Oceans through the Isthmus of Tehuantepec, communicated by Mr. Murchison.
8. King (Dr.) on the Fish River of the Polar Sea.
9. Knipe (J.) on his geological map.
10. Williams (D.) on the Exeter amygdaloid.

1, 2, 3. Of the first three papers we need only mention that the last led to some opinions upon the variety of toadstones, and their interposition between limestone strata (see onward, No. 10.)

4. To illustrate which a very fine model was exhibited, was an accurate view of the stratification in question; from which division of the secondary carboniferous strata so large a proportion of our lead ore is extracted.

5. The author first gave a general view of the palæozoic succession of Russia, shewing that, however perfect in exhibiting a succession of silurian, Devonian, carboniferous, and permian rocks, it was defective in its base, inasmuch as, between the lower silurian rocks of the government of St. Petersburgh and Reval and the crystalline rocks of Finland, there occurs a wide and deep bay of the sea. Again, in tracing the lower edge of the silurian rocks from St. Petersburgh to the north-east, their junction with the masses which preceded them is not to be defined, owing to large accumulations of detritus. A third obstacle to the determination of the order of succession, is the circumstance that, in trending to the north-east, the silurian rocks, which in the Baltic provinces are soft, unaltered deposits, come into contact with eruptive greenstones, trap, &c., and undergo a metamorphosis over a considerable breadth of country, and thus the exact manner in which these early depositary strata repose upon any pre-existing rocks is very difficult to discover. Scandinavia, on the contrary, presents a very clearly defined base-line, exposed in different sections both in Sweden and Norway. The very lowest silurian beds, charged only with fucoids, rest in horizontal masses upon the highly-inclined and crystalline rocks of an earlier period, and at certain localities are, to a great extent, formed out of their detritus. In these first-formed crystalline deposits no traces of organic remains can be discovered, nor indeed in the very largely developed lower part of the series, as exposed in the British isles, have any fossils been observed besides those of lower silurian type. This condition, which is general as far as Europe, Russia, and America are concerned, combined with the prevailing theory that the first solid envelope of the globe was accumulated under such intense heat as to preclude the existence of animal life, induced Mr. Murchison to propose that this lowest group of rocks may be termed "*azoic*," in reference to the palæozoic series by which it is succeeded, simply to express that no organic remains have yet been discovered in it. Believing that metamorphism has fre-

quently imparted a crystalline character to sedimentary strata containing organic remains, as stated by Prof. Forchhammer, the author deemed it essential to draw the most marked distinction between this more modern class of crystalline rocks, and that which he terms "azoic." In Norway there are large transition territories replete with granite, porphyry, and greenstone, erupted *posterior* to the silurian deposits, and producing altered rocks, that are, however, distinguishable from the ancient gneiss, &c. upon which they repose. Illustrating his views by a general section across Sweden and the Baltic Sea to the tracts of Russia east and south of St. Petersburgh, Mr. Murchison explained how the lower silurian rocks of both countries contained a similar group of organic remains, including many species well known in the deposits of the same age in the British isles. In Sweden—at least, in all its central and southern provinces—as well as in the Baltic governments of Russia, no true upper silurian rocks are found. The whole of these highly fossiliferous regions belong to that early period in which not even the lowest orders of vertebrated animals lived,—a circumstance which assigns to them a truly "protozoic" character. The fact of the existence of marine vegetables alone in the loweat of these rocks, and their co-existence with the earliest traces of the remains of animals, sustains that law of the economy of nature, from which it might have necessarily been inferred that large classes of animals could not have lived without vegetable sustenance. Mr. Murchison explains the absence of the upper silurian rocks from southern and central Sweden, and from the Baltic governments of Russia, by the hypothesis that these regions had been previously elevated beyond the influence of depositary action; a view which is rendered probable by the occurrence of these rocks in the Baltic islands of Gothland, Osel, and Dago, which are made up of corals and mollusks, similar to those of our Wenlock and Ludlow formation; the whole reposing on a land of limestone with pentameri (Gypidium of Hisinger) occupying the place of the Woolhope and Horderly limestone of the silurian system. Beneath it are black schists, sandstones, &c., containing trinuclei, asaphi, and agnosti, sphæronites, orthidæ, and certain chambered shells, constituting a group like that which characterises the rocks of the same age in the British isles. In the territory around Christiana, and in the islands of the Fion, these two divisions of the silurian system are beautifully exposed in numerous undulations and dislocations of the strata, and they are there so bound together by zoological and mineral transitions, that they constitute one very distinct natural group, in which the coralline masses of the upper division are analogous to those of Dudley and Wenlock, the best-developed types in England, and like them are surmounted by flag-like strata. Mr. Murchison then briefly alluded to a discovery which he made at Christiana, of an ascending succession, in which the upper silurian strata are seen to pass under great escarpments of red flagstone, sandstone, and conglomerate, which, pierced and covered by porphyry, occupies a considerable breadth of high land, and reposes as a great basin upon true upper silurian rocks. In conclusion, Mr. Murchison gave a sketch of some of the great leading features of Russian palæozoic geology, shewing that the Devonian rocks there occupy a space not less than Great Britain—that, reposing upon silurian rocks, and overlaid by true carboniferous limestone, they there contained the same group of fishes as in Scotland, and the same group of mollusks and corals as in the strata occupying the same horizon in Devonshire, the Boullonnais, and the Rhenish provinces. This Devonian system is the earliest storehouse of fishes, a few small species only having been discovered in the upper silurian rocks; and the striking distinction between these Devonian ichthyolites and those forms which succeeded them in posterior epochs has been amply sustained by Agassiz. The coincidence between the organic remains of the carboniferous limestone of Russia and that of the British isles, and the perfect agreement between numberless species of shells found in the Yorkshire dales on the one hand, and in tracts of Siberia on the other, was adverted to as a strong proof, in addition to that derived from the wide spread of the same fossil coal-plants, that in these early epochs there prevailed much more equable and widely-diffused climatal conditions than at the present day. And lastly, Mr. Murchison summed up the views of M. de Verneuil and Count Keyserling, his coadjutors, and himself, by explaining that the permian strata (so named from occupying a region more than twice as large as France around the ancient kingdom of Permia) were connected with the lower palæozoic deposits, by containing many organic forms belonging to the same families and genera, though for the most part specifically distinct. The land-plants of this system approached very nearly to those of the carboniferous epoch; and M. Adolphe Brongniart had often found a difficulty in separating them. This permian system comprehended the formation of the lower new sandstone (*Rohte todte liegende*), magnesia limestone (*Kupfer schiefer et Zechstein*), and also some overlying red sandstone, which has been hitherto grouped with the Trias. The termination of the permian system is marked by an entire change in animal, and, as far as we yet know, vegetable life; for the fossils of the red marls, *Muschelkalk* and *Keuper* (new red of English geologists), are wholly distinct from those of the palæozoic series. Mr. Murchison laid upon the table copies of a tabular list of all the organic remains of the permian system, as prepared by M. de Verneuil and himself, and forming part of a work about to be published on the geology of Russia. He also called attention to a lithological map of Sweden, now in preparation, in which a great number of the ancient crystalline rocks would be distinguished from each other by separate colours, and all their flexures marked upon the map. A portion of this map was exhibited to him by Baron Berzelius, under whose superintendence it will be published; and he alluded to the geological map of the Christiana district by Prof. Keilhan, and announced a new geological map of the northern part of Norway.

6. Mr. Murchison read Dr. M. Forchhammer's paper. It has been already noticed in our last *Gazette* (Chemical Section). The communication is to be published entire in the Journal of the Association.

7. One of the plans frequently brought under the notice of our readers, and unnecessary to repeat.

8. An interesting account of the river so often described in the expeditions of our North American travellers, Ross, Parry, Franklin, Dease, Simpson, &c.; concluding with an earnest invocation to complete the survey of that small remaining part of the unexplored Polar Sea.

9. The details of a well-constructed geological map.

10. Mr. Greenough inquired twenty-five years ago, "What mineralogist can draw a line of demarcation between the red marl and the toadstone of Heavitree?" Mr. Williams now produced specimens, and pointed to diagrams, which not only repeated the question, but which also asked—"What reasonable observer would venture to assert, that the trappean matter had ever been injected into the variegated marl and sandstone?" Instead of countenancing such hypothesis, the specimens and the quarry-sections shewed distinctly every stage of gradation, from the perfectly and imperfectly fused sandstone, to a partially freckled surface caused by the remoter or incipient process of conversion, more satisfactorily almost than the bounding rocks which had been invaded and melted down by granite veins, to which he had already directed the attention of geologists. They were, in fact, granite veins in every sense except the substance; and, like them, evidenced that they were the active instruments, as it were, of the process of reduction, always in advance of the lava-sea within; while their efforts at reducing the bounding rocks, by the fiat of the Creator, contained in themselves the elements of compensation and correction, in their thus working out safety-valves and channels of communication with the surface of the globe over the several volcanic areas. Extended observations justified him in repeating more confidently what he had before advanced—viz. that the greater or less amount of alteration, and the presence or absence of granite vein-like processes, or roughly and deeply eroded cavities in the adjacent rocks, would always enable an observer to discriminate correctly whether any igneous rock (whatever may be its dimensions) had been generated and crystallised *in situ*, or whether it was a contemporaneous and erupted product. He particularly directed attention to the section of the Raddon quarry, which shewed three seams of unfused grit 10 and 12 feet in length, and from half an inch to two inches thick, which tapered out to nothing at their several extremities in the trap, giving the latter, to that extent only, the appearance of bedding. The presence of these thin lines of sandstone, he contended, was perfectly inexplicable on the hypothesis of the injection of the trap; but was very simply and satisfactorily accounted for by an obvious and very natural result of fusion—viz. that on the abatement of the temperature, and a cessation of the process of reduction, certain portions of the rock acted on would escape perfect conversion; a circumstance of the most ordinary occurrence with either slate or sandstone on the confines of granite and granite veins, and which was seen also in the section of the Bleadon trap and limestone; but of which he scarcely remembered a single instance in the embedded or contemporaneous greenstones. Again, at both the Raddon and Pocomb Hill quarries the variegated sandstone rested upon the trap, with no appearance whatever of having been dislocated or deranged by it; a circumstance altogether at variance with a supposition of the latter having been injected or forcibly protruded, but perfectly reconcileable with the theory of tranquil fusion and conversion. If the amygdaloid in either case had been forcibly protruded, it necessarily must have displaced very many million cubic yards of sandstone, and caused great derangement: yet there was not a particle of evidence of any thing of the kind having taken place. He had now discovered instances of the process of fusion and conversion in all the slates, sandstones, and limestones of South Devon and Cornwall, in the mountain limestone of the Mendips, and the variegated sandstones about Exeter; all of

them explicitly and emphatically negativing the hypothesis of injection.

SECTION D.—(*Zoology and Botany.*)

1. Thompson (W.), note of addition to the Irish fauna, and of some new species of invertebrata.
2. Alder and Hancock (Messrs.), descriptions of some new species of nudibranchiate mollusca.
3. Forbes (Prof. E.) on the morphology of the reproductive system of the sertularian zoophytes.
4. Carpenter (Dr.) on the microscopic structure of shells, &c.
5. Goadby (H.), exhibition of dissected specimens of several species of invertebrate animals, illustrating some observations on the nature and action of preserving fluids.
6. Owen (R.) on some late experiments by Madame Power on the argonaut.
7. Laycock (Dr.), suggestions for the observations of periodic changes in animals.
8. Denny (H.), report on anoplura.
9. West (T.) on sclerotic plates in fishes.
10. Schomburgk (Chev. R. H.) on the rovaima in Guiana; and 11. On the trees of Guiana, and their uses.

[No. 3. The most remarkable paper in this Section during the meeting was fully reported in our last *Gazette*.]

1, 2, 5, and other papers, brought several insulated and local varieties before the audience; and most of them, to be perfectly understood, depended on their figured drawings and specimens exhibited. Still their value to natural history was truly eulogised by Professor Forbes, Mr. Patterson, and others, who pointed out the importance of producing all new specimens of plants and animals before the Association; and the latter naturalist particularly alluded to many of them of great beauty and interest, though upon our own shores, yet hitherto undescribed.

4. Dr. Carpenter repeated his lecture in this Section, and was listened to with marked attention.

6. Mad. Power's interesting experiments on the argonaut, which she still pursues with indefatigable zeal, are well known to readers of natural history; but as Professor Owen did not enter into any new details of forms, method of swimming, &c., we may safely leave this and the remaining papers without further comment.

7. Read by Dr. Lankester, was of a theoretic kind; and, together with Chev. Schomburgk's continued description of Guiana trees, gave general satisfaction.

SECTION F.—(*Statistics.*)

1. Alison (Dr.), notes on the Report of the Poor-Law Commissioners on the state of the poor in Scotland.
2. Clendinning (Dr.), the statistics of health, elucidated by the records of the Marylebone Infirmary.
3. Laycock (Dr.) on the additions to vital statistics contained in the First Report of the Commissioners of Inquiry into the circumstances affecting the health of towns.

No. 1 was a very long, and, for the purposes in view, a valuable exposition of the Report of the Scotch Poor-Law Commissioners. The miserable pittances doled out to the unfortunate in that country appear to be a disgrace to humanity.

No. 2 detailed the sanitary statistics of Marylebone Infirmary during a period of nearly seven years.

No. 3 discussed the diseases incident to London, and ascribed them to the usual causes—ill-ventilated workshops, which, for example, induced consumption in artisans to the amount of 30 per cent, whilst that of gentry and professional men was only 16—the want of a proper supply of water, and other evils incident to overlabour and poverty; some of which, we trust, are now in process of being remedied. Sure we are that they ought not, cannot remain as they are since the spirit of investigation has been awakened.

Mr. Fletcher communicated some information respecting the state of education in York; and Col. Sykes having addressed the Section, complimentary to its labours, it adjourned.

SECTION G.—(*Mechanics.*)

1. Hawkins (J.) on the economy of artificial light for preserving sight.
2. Bevan (W.) on a life-boat.
3. Scoresby (Dr.) on a new process of magnetic manipulation.
4. Bodmer (J. G.) on the new double-piston steam-engine.
5. Russell (J. S.) on the resistance of railway-trains.
6. Fairbairn (W.) on the economy of the expansive action of steam in steam-engines.
7. Taylor (J.), description of the great fountain at Chatsworth, by Mr. Paxton.

1. Curious experiments on candles were brought on the tapis, and the domestic economy of snuffing or not snuffing them was canvassed. Mr. Hawkins tried two common candles, of eight to the pound, alternately snuffing and leaving them unsnuffed, and measuring the intensity of the light by the shadows on the walls. The result of this experiment was, that he found that the candle well snuffed gave eight times the light of that which was unsnuffed. He then proceeded to a process of weighing, and he found that the unsnuffed candle had burnt one-ninth more tallow than the snuffed candle, and that one pound of the snuffed candles gave as much light as nine pounds of the unsnuffed candles. He concluded by recommending the self-snuffing candle in preference to oil-lamps.

Dr. Green stated that a common candle placed at an incline of 15 degrees would constitute a self-snuffing candle. He had tried this for many years, and it did not prevent the candle from burning straight.

[A candle-flame is hollow, there is no combustion of the gaseous matter in the centre where the upright ordinary wick is; hence the deposit of carbon upon it, or the cauliflower-top, necessitating snuffing to give more light or prevent excessive waste. When the wick is placed in an incline, or brought so by platting or otherwise, it falls in the burning shell and there consumes to dust.]

2. This boat consisted of two keels, one above the other, and air-cavities on each side to preserve buoyancy, whilst the timbers were constructed below to maintain equilibrium. Tubes were introduced so as to render it a sieve incapable of holding water; and it was described as indestructible by storm, collision, or accident.

3. To our notice of Dr. Scoresby's communication, read also before Section A, on Thursday, we have only to add the author's concluding remark, that by means of this new process,—the principle of which simply consists in the developing the magnetic energies of a magnetisable substance, not by the direct action of the magnet, but through the medium of a magnetisable substance of like dimensions interposed,—the horse-shoe magnet, an instrument so compact and convenient for practice, becomes available for magnetising all kinds of bars or plates capable of being constructed into permanent magnets.

4. An improved double-piston steam-engine, said to be superior in economy, velocity, and diminished strain.

5. Mr. S. Russell communicated the results of various experiments he had made on the resistance of railway-trains on the Sheffield and Manchester Railway, where long and steep gradients existed of 1 in 100 and 1 in 118. The resistance had been much greater than was anticipated. The rate of speed, from the summit of one of these gradients, being 23·6 miles per hour, the resistance to an empty train of six carriages had been 19 lbs. to the ton. When loaded with 15 tons, at 30 miles, it was the same. On a light train, 28 miles per hour, 22 lbs.; loaded, 36 miles per hour, the same. A 6-wheeled engine and tender, the same at 23 miles. Six carriages, engine, and tender, at 32 miles, shewed 22 lbs., being the same as that of the carriages moving separately at 28 miles. Nine loaded carriages, engine, and tender, at 36 miles, 22 lbs.

Much discussion ensued as to the effect of the flange and conical tire in increasing the resistance, Mr. Fairbairn attributing much of the existing oscillation to the latter; and we understand that it has been suggested to Mr. Russell in future experiments to test the effect produced by a total divestiture of the flange and disuse of the conical tire by the employment of Prosser's guide-wheel as part of future experiments.

6. Mr. Fairbairn's paper, as all he does, was full of practical advice upon the saving of steam in its application to locomotion.

7. The great fountain, one of the lions of Chatsworth, is supplied with water from a reservoir which covers eight acres of land, and receives the waters from the moors. A hundred thousand yards of earth has been cut away for this reservoir, and 2621 feet of piping, having 298 joints, have been constructed for conveying the water. The fall of the pipe is 381 feet, and the height which the water attains from the fountain (or which it is expected to attain when the whole work shall have been brought into full operation) is 280 feet, or, as was observed, about 60 feet beyond the highest point of York Minster.

The evening closed with another promenade and *soirée*, unimproved by any scientific or intellectual introduction.

WEDNESDAY.

Some of the Sections met to get through postponed or over-numerous communications.

SECTION A.—(*Mathematics and Physics.*)

1. The Astronomer Royal, a verbal account of the state of the reductions of the planetary and lunar observations at Greenwich, for which grants of money have been made by government, at the request of the British Association; and 2. A verbal account of the results of tide-observations on the coast of Ireland.
3. Russell (S.), final report on the tides of the east coast of Scotland; and 4. On the nature of sound-waves.
5. O'Brien (Rev. —) on the propagation of waves in a resisted medium, with a new explanation of dispersion, absorption, and other optical phenomena.
6. Rawson (—) on summation of infinite series, communicated by E. Hodgkinson, Esq.
7. Wheatstone (Prof.) on a singular effect of the juxtaposition of certain colours under particular circumstances.
8. Sylvester (J. J.) on the double-square representation of prime and composite numbers.
9. Brewster (Sir D.) on the accommodation of the eye to various distances; and 10. On the polarisation produced by rough surfaces and white dispersing surfaces.

1. The purport of Prof. Airy's first account was, that the reduction of the planetary observations of Greenwich, a valuable series since 1750, had been completed, and that several computors were engaged on the lunar observations for the same period, which he hoped would be reduced and finished in a few months.

2. The results of two months' tidal observations every five minutes during the hours before high water, and at other stated periods, described by Prof. Airy, evidenced remarkable phenomena in the tides on the coast of Ireland; and exhibited the indefatigable labours of the Astronomer Royal.

7. We pass on to Prof. Wheatstone's communication, the intermediate ones possessing no particular general interest. His attention

had been recently called to a very curious phenomenon connected with the physiological effect of colours on the retina. A pattern worked in coloured worsteds, consisting of blue spots on a red ground, or red spots on a blue ground, being moved when illuminated by candle or lamp light, the spots appeared to have a remarkable tremulous motion, perfectly independent of the ground. The illusion is so strong, that it is difficult, at first, to believe otherwise than that the spots are detached from the ground, and in independent motion. It was observed that this effect did not take place in daylight, and that it did not succeed with other colours. It was the opinion of most persons who saw this experiment, that the effect was principally due to alternation of light and shade, occasioned by the ridged surface of the worsted-worked pattern. To ascertain whether this was the case or not, Prof. Wheatstone prepared several patterns, painted with the same colours on a smooth surface of paper; the effect was equally striking, nor did ruling the surface with crossed black lines appear to augment the effect. He next tried the juxtaposition of various colours, but the only ones that perfectly succeeded were red and blue, and red and green; the former exhibited more apparent motion. Black and white gave no result. The effect, therefore, did not depend on the mere contrast of a bright and dark colour, nor on the contrasts of complementary colours. The effect depends, in a remarkable degree, on the intensity of the illuminating light; if too strong, the apparent motion ceases, if too weak it equally disappears. The proper degree of illumination may be easily ascertained by standing with the back towards the candle, holding the pattern at a short distance from the eye, and receding from the candle till the proper light is obtained. The experiment succeeds equally well with candle, lamp, or gas light, and whether the room is illuminated with a single or numerous points of light. Different patterns require, in order to produce the maximum effect, different degrees of luminous intensity.

The author has no doubt that this phenomenon depends in some way on the different durations of the luminous impressions on the retina of different colours and of various degrees of brightness. But it is difficult, he says, to explain why red and blue and red and green alone should produce the phenomenon in any obvious degree, and why artificial light should be necessary for its manifestation. It might be supposed that daylight is inefficient because it is too intense; but although Prof. Wheatstone observed traces of the effect in a darkened room, yet, attenuate the daylight as you will, no effects at all approaching to those caused by a moderate reduction of candle or lamp-light are produced. We know that artificial light is yellower than daylight, and it might be imagined that the effect arises from this cause, converting the blue into green; but the juxtaposition of red and green in daylight gives no result; nor does passing the light of a candle through blue glass appear to diminish the effect.

The papers of Prof. Sylvester and Sir David Brewster, and one by Sir William Hamilton, received too late for the list, concluded the business of the Section.

SECTION C.—(*Geology and Physical Geography.*)

1. A paper was read by Mr. A. Dean relative to a recent discovery made by him of the existence of a complete series of gold veins in the lower silurian formation of North Wales, comprising the whole of the Snowdonian group of strata in Carnarvon and Merionethshire. The veins were represented as being very abundant, and where they cross other mineral veins of an older formation, frequently containing rich deposits of gold, mixed with lead and other ores. Beautiful specimens of the ores were exhibited, some of which were represented as containing from 60 to 200 ounces of gold per ton of ore. The author observed, that these ores are found in precisely similar strata to those composing the eastern flank of the Ural mountains, from which the great supply of Russian gold is obtained.

Mr. Griffiths said, upon one occasion only had he ever seen mineral veins accompanying trap-dykes; and he thought the facts laid before the Association, in the paper just read, were of the utmost importance, as he was not aware of any system of gold mines having ever before been found in Great Britain.

2, 3. Two other papers were also read, one by Mr. Batten, on his explanation of certain geological phenomena of the agency of glaciers; and the other by Mr. T. Oldham, on the occurrence of marine shells in the gravel of Ireland.

SECTION D.—(*Zoology and Botany.*)

1. A very long report on some recent researches in the strange structures, functions, and economy of the araneida, by Mr. J. Blackwell.

2. The next paper was by Mr. Goodsir, on the functions of some organs in the decapoda crustacea, and a paper on the structure and mode of development of the cystic entozoa.

3. Prof. Owen read an abstract of M. Agassiz' report on the fossil fishes of London clay. The next subject which the professor alluded to was the skull of a female aborigine which had been sent to him by Governor Gray of South Australia.

4. Mr. C. H. Peach made a few observations on the natural history of Coran, Cornwall. He principally noticed different species of shells, &c., which he had found, which amounted to about 171.

5. Mr. Ball next gave a very short but interesting description of the structure of the hoof of the giraffe, and was of opinion that its general habits were to roam on the mountains.

SECTION G.—(*Mechanics.*)

1. The Rev. Mr. Morris's plan for preventing the stealing of letters is, we think, an impossibility where correspondence is not very limited; and we therefore refrain from the details about slips to be put in with the letters, and torn off and filed, and returned at stated periods, when they reach their destination.

2. Mr. J. G. Bodmer exhibited a variety of improved cutting tools, which he described; and also read a paper on a new apparatus for starting heavy machinery; and a description of a new furnace-grate. The apparatus takes the stress off the machinery, and thus effects a considerable saving in the diminution of breakages; and the peculiarity of the fire-grates is, that instead of the fire-bars being placed underneath the boiler in the usual manner, they are made to travel from the fire-place or hopper towards the bridge, and return again to the place whence they started in the opposite direction. The object is to admit of the supply and combustion of the fuel being perfectly controlled, and regulated according to circumstances, and to prevent the emission of smoke, by causing the gas generated from the green coal at the time when the heat commences to act upon it, to pass over the whole surface of the ignited fuel before reaching the chimney.

3. Dr. Greene gave an interesting description of Nasmyth's steam pile-driver, which is constructed on a similar principle to his steam-hammer. (See *Lit. Gaz.*, No. 1447).

4. Mr. J. Buchanan offered some observations on a new locking-apparatus for carriages, which he illustrated by models. By this plan the front wheels might also be enlarged and the carriages made much lighter and cheaper. He also exhibited some carriage-springs, the improvement in which was effected by the introduction of leather packing, which, it was stated, completely destroys that vibration which is so exceedingly unpleasant.

5. Mr. Gray enumerated a variety of experiments on iron bars, with a view to shew that the want of due proportions in the several parts is productive of more or less danger, and the importance of giving iron a perfectly continuous shape, to prevent crystallisation. The result of his experiments was, that whilst one bar, reduced to the real genuine metal, three quarters of an inch in diameter, required 1494 strokes to fracture it; three other bars, of the same diameter, so far as concerns the genuine metal, but two and a quarter inches in diameter with the superfluous weight surrounding them, were severally broken by 106, 10, and 3 blows.

6. Mr. Lucas followed, shewing, by a description of a course of experiments, that iron becomes altered in its constitution by continual vibration.

7. Mr. Scott Russell, in the absence of the author, Mr. Smith, read a paper on propelling boats, in which the jet plan was advocated.

8. A paper on the filtration of water for the supply of towns, by Mr. B. G. Slope, was next read; and the high-pressure plan through pipes containing sand, was recommended; which Mr. Hawkins decidedly opposed.

LITERARY AND LEARNED.

PROSPECTIVE VIEW OF THE PUBLISHING SEASON

AT the opening of the season we have made a note of what the majority of our principal publishers have in preparation—works which will now rapidly appear; and we trust the bird's-eye view will be welcome to every class of readers.

Mr. Murray's list of announcements for the approaching publishing season is of goodly promise, We select the most prominent from the present Catalogue:

Correspondence and Despatches of the great Duke of Marlborough, from 1702 to 1712, edited by Sir G. Murray: in six 8vo volumes, uniform with the "Wellington Despatches." Memoirs and Correspondence of Lieut.-Gen. Sir Hudson Lowe, arranged and edited by his Son, Hudson Lowe, Esq. Memoirs of Father Matteo Ripa during Thirteen Years' Residence at Pekin; with an Account of the Foundation of the College for the Education of Young Chinese at Naples, by Fortunato Prandi. Voyage of Discovery and Research in the Southern and Antarctic Seas during the Years 1839-43, by Capt. Sir J. C. Ross. Correspondence of the Right Hon. Richard Hill, Envoy Extraordinary from the Court of St. James to the Duke of Savoy in the Reign of Queen Anne, edited by the Rev. W. Blackley, B.A. Life of the Great Condé, by Lord Mahon. England under the Anglo-Saxon Kings, from the German of Dr. J. M. Lappenberg, Keeper of the Archives of the City of Hamburg, by B. Thorpe, F.S.A. Life of the late Lord Hill, by the Rev. E. Sidney, A.M. Hawkestone: a Tale of and for England in 184-. The Legends of Saints and Martyrs, as illustrated by Art, from the Earliest Ages of Christianity to the present Time, by Mrs. Jameson. The Theogony of the Hindoos, with their system of Philosophy and Cosmogony, by Count Bjorstjerna.

Messrs. Longman, Brown, Green, and Longmans' list is, as might be expected, an important one, including

The History of Society in England during the Middle

Ages, by T. Wright, Esq.—1. The Peasant, or Serf; the Clan attached to the Soil.—2. The Feudal Lord, or Master of the Soil.—3. The Parasite Class, or Class which lived on the Superfluities of the Feudal Lord.—4. The Burgher, or *Tiers Etat*.—5. The King.—6. The Clergy. A Treatise on the Principles and Practice of Taxation and the Funding System, by J. R. M'Culloch, Esq.; and, by the same able hand, The Literature of Political Economy: being a Classified Catalogue of the principal Works in the different departments of Political Economy, interspersed with Historical, Critical, and Biographical Notices. Ranke's History of the Reformation, translated by Sarah Austin. On Landed Property and the Economy of Estates, comprehending the Relation of Landlord and Tenant, by Mr. David Low. Travels in India, &c., by Capt. L. von Orlich; translated from the German by H. E. Lloyd. Moore's Irish Melodies, with 154 Designs by D. Maclise. The History of Great Britain, from the earliest Period to the Norman Conquest, by the Ven. Archdeacon Williams. A new View of Insanity: the Duality of the Mind proved, &c., by Dr. A. L. Wigan. The Collegian's Guide; or, Faithful Pictures of College Life, by an M.A. of five years' experience at Oxford. The third and concluding volume of the Correspondence of John fourth Duke of Bedford. The Life, Progresses, and Rebellion of James, Duke of Monmouth, &c. to his Capture and Execution, by G. Roberts. Professor Owen's Lectures on the Comparative Anatomy and Physiology of the Vertebrate Animals, delivered at the Royal College of Surgeons in 1844. Recent Improvements in Arts, Manufactures, and Mines: being a Supplement to his "Dictionary," by Dr. Ure. The Betrothed Lovers, translated from the Italian by Anna Mary Howitt. The Keepsake for 1845, and The Book of Beauty for 1845, both edited by the Countess of Blessington; also Cattermole's Historical Annual. Sir James Mackintosh's Miscellaneous Works, collected by his Son. Lyrics of the Heart, and other Poems, by Alaric A. Watts. Napoleon: an Epic Poem, in Twelve Books. The Lady's Country Companion; or, How to Enjoy a Country Life rationally, by Mrs. Loudon.

Mr. Bentley, who has of late been publishing more than any of his compeers, and, as our columns shew, some works very creditable to our literature, has further announced:—

Agincourt; an Historical Romance, by G. P. R. James, and a subject worthy of his pen. Two concluding volumes of the Earl of Malmesbury's valuable Historical Diaries and Correspondence. The Deerhursts, a Novel; and the Chevalier, from the popular pen of Mrs. Thomson. Walpole's Memoirs of the Reign of George the Third, edited with Notes, by Sir Denis Le Marchant, Bart. Married at Last; a Novel, by the author of "The Busy Body." Homes and Haunts of the English Poets. Anecdotes of Dogs, by Mr. Jesse. The Letters of the Earl of Chesterfield (many original), now first collected and edited, with Notes, &c., by Lord Mahon. Hampton Court; an Historical Romance. The completion of M. Thiers's History of the Empire and Restoration; and the World of Wonders, edited by Albany Poyntz.

Mr. Colburn is also active in the field, and announces the following works:—

M. Thiers' History of the Consulate and the Empire, translated and edited by Dugald Forbes Campbell, Esq. The Despatches and Letters of Admiral Lord Viscount Nelson, edited by Sir Harris Nicolas. The Fate and Fortunes of Margaret Catchpole, a Convict. My Adventures during more than Twenty Years, by Colonel Montgomery Maxwell, K.H. (brother of Sir Murray Maxwell), commanding the 36th regiment. The Crescent and the Cross; or, Romance and Realities of Eastern Travel, by E. B. G. Warburton, Esq. Adventures of an Officer in the service of Runjeet Singh, edited by Capt. Lawrence, Bengal Artillery. Letters of a German Countess, written during her travels in Turkey, Egypt, the Holy Land, &c. And among the works of fiction:—Lady Cecilia Farrencourt, by Henry Milton, Esq., author of "Rivalry." The Roman Traitor; a true Tale of the Republic, by the author of "Oliver Cromwell." Hillingdon Hall; a Tale of Country Life, by the author of "Handley Cross." And the Palais Royal; an Historical Romance, by the author of "Henri Quatre; or, the Days of the League."

Messrs. Rivington likewise promise several new publications; we select a few that are almost ready for the press:

Parochial Sermons, by the Rev. R. W. Evans, author of the "Rectory of Valehead." Tirocinium; or Lectures on Education, by the Rev. Dr. Wordsworth, Head-Master of Harrow, intended as a Companion to his "Theophilus Anglicanus." A Volume on the Syntax of the Relative Pronoun and its Cognates, by Dr. Alfred Day, of Bristol, illustrated by numerous Latin and Greek Examples. Account of the Writings of Tertullian, by the Bishop of Lincoln (a new edition). An Alphabet of Emblems, in Verse, by the Rev. T. B. Murray, illustrated with numerous Wood Engravings. School Sermons, by the Rev. Dr. Moberly, Head-Master of Winchester. Origines Liturgicæ; or, History of Liturgies, by the Rev. William Palmer (new edition).

SKETCHES OF SOCIETY.

PUBLIC BATHS AND LAUNDRIES CONNECTED WITH EDUCATION.

Much has been written and published on this benevolent project since our notice last Saturday, and many futile objections have been stated, as well as several useful hints thrown out. Our suggestion of allowing the younger children of families to attend their mothers at the laundries, instead of being left at home (such homes as the poor creatures have), exposed to accidents by fire, &c., has procured us an additional hint, which we think of considerable consequence. It is, to attach a schoolroom to every laundry, and establish there a worthy Dame, for whom a very small stipend would suffice, and who should take charge of such infants whilst their parents were employed; seizing the opportunity, so far as it afforded scope, to teach them the earliest steps of education, and inculcate such moral principles into their minds as they were capable of receiving at so tender an age. Much, it is true, could not be done in these brief and casual lessons, but they would be a beginning and an advance in the right path; and it is wonderful with what tenacity the slightest impressions on infancy adhere to after years of life, and often tend to save the tempted from the evils which beset them. At all events, the expense would be very trifling, and the trial most worthy of those whose aim is to better the condition of the poor.

THE DRAMA.

Drury Lane.—The revival of the *Revolt of the Harem* on Wednesday was attended with a greater degree of approval than might have been anticipated from a ballet that certainly had its day. This was mainly attributable to Mdlle. Plunkett, who made her first appearance on English boards in the principal part, and exhibited a greater perfection in her art than was hardly to have been expected from her previous performances at Her Majesty's Theatre. Her very first bound upon the stage was decisive as to her capability; and as the ballet advanced she confirmed this impression in her favour. She performed beautifully throughout, and was called for both in the course of the ballet and at its termination. In answering the latter call she was accompanied by Miss Clara Webster and M. Montessu, who had exerted themselves greatly during the progress of the piece, and with Miss O'Bryan, Mad. Giubilei, and Mr. W. H. Payne, contributed materially to its favourable reception.

Lyceum.—The *Seven Castles of the Passions*, after exciting no little expectation from a variety of causes, was produced at the Lyceum on Monday with considerable success—a success which would probably have been more decided if too high anticipations had not been provoked previously to its production. Its story is fanciful enough, but not dramatic; and in carrying it out there is a degree of monotony in the scenes of the seven temptations which renders the last part far less effective than the first. On the whole, however, it is a very pleasant piece of the sort, though the dialogue lacks point and raciness. It has been put upon the stage in an admirable manner; and, as far as it could be, was well acted by Mr. and Mrs. Keeley, Misses Fairbrother and Fortescue, and Mr. Diddear; effectively assisted by Mrs. Wigan and Messrs. Collyer and Craven. Two or three bits of Mrs. Keeley's performance are glorious.

VARIETIES.

The Union-Jack of Great Britain, by M. H. Barker (Ackerman and Co.).—The Old Sailor has really done a seaman-like thing in this ingenious contrivance. A few inches of thin pasteboard and two leaves of paper serve to display the whole history and appearance of the Union-Jack—a Jack never to be conquered! In the centre, on a blue ground, is the old Scottish white cross; and on each side, folding inwards, the English and the Irish red cross, of St. George and St. Andrew shape. The former, folded on the Scottish ensign, makes the Union flag of 1606, when "bonnie King Jamie frae Scotland came;" but the Irish, being first placed over the Scotch, and the English placed over both, the whole is the present glorious flag of the United Empire.

Fulcher's Ladies' Memorandum-Book (Sudbury, Fulcher; London, Longmans), our annual model of what such things ought to be in the provinces, though very fit also for townladies, has already opened A.D. 1845 to our view. Its embellishments are this year we think neater and better engraved than usual; the neighbour-poetry, contributed by B. Barton, Emma Bloodworth, and other accomplished Suffolk lovers of literature, does honour to their muses; and the useful arrangements for memoranda and accounts, &c., also appear to be conveniently improved. It is altogether a right little pocket-book, which we can recommend to our fair friends.

Royal Asiatic Society.—The first of the meetings of this society for the season 1844-45 will take place on Saturday next (2d Nov). Our usual weekly list of meetings will be commenced in an early number.

The Lord Mayor's Portrait for the King of the French is, it is said, to be painted by the German artist Winterhalter, whose portraits of the Queen and Prince Albert were much admired last year, when exhibited in Cockspur Street.

Goëthe's Statue for his native place, Frankfort-on-the-Maine, has been conducted in a triumphal manner from Munich to that city, where it arrived on the 16th.

Earthquake.—A very wide range of earthquake was experienced in the West Indies on the 29th of August, including St. Vincent's, Grenada, Trinidad, and British Guiana. The movement was very violent, and the atmosphere in a highly electrical state. Previous to the shock there was a severe storm of thunder and lightning.

LITERARY NOVELTIES.

LIST OF NEW BOOKS.

Uncle Peter's Fairy Tales: the first Story, containing the History and Adventures of Little Mary, Queen of the Great Island of Brakarakakaka, fcp. 8vo, 5*s*. 6*d*.—The Natural Boundaries of Empires; and a New View of Colonisation, by J. Finch, fcp. 8vo, 6*s*.—Courts of Requests; their Jurisdiction and Powers, by D. R. Keane, 12mo, 2*s*.—Young Love, by Mrs. Trollope, 3 vols. post 8vo, 1*l*. 11*s*. 6*d*.—The Attaché; or, Sam Slick in England, Second Series, 2 vols. p.-8vo, 21*s*.—Treatise on Painting, by Cennino Cennini, translated by Mrs. Merrifield, royal 8vo, 12*s*. mor.—Biagioli's Italian Grammar, by Rampini, 12mo, 3*s*.—Principles of Forensic Medicine, by W. A. Guy, 12mo, 10*s*. 6*d*.—The Missionary's Reward; or, the Success of the Gospel in the Pacific, by G. Pritchard, fcp. 4*s*.—Fisher's Drawing-Room Scrap-Book for 1845, 4to, 21*s*.—Fisher's Juvenile Scrap-Book for 1845, 8vo, 8*s*.—Allom's Character and Costume in Turkey and Italy, new edit. imp. 4to, 1*l*. 11*s*. 6*d*.—Despatches and Letters of Lord Viscount Nelson, with Notes, by Sir H. Nicolas (3 vols.), Vol. 1. 8vo, 15*s*.—The Monster Telescope erected by the Earl of Rosse at Parsonstown, 8vo, 2*s*. 6*d*.—The Sentiment of Flowers, new edition, with 20 coloured plates, 8vo, 21*s*.—St. James; or, the

Court of Queen Anne: an Historical Romance, by W. H. Ainsworth, 3 vols. post 8vo, 1*l.* 11*s.* 6*d.* — The History of Etruria, by Mrs. H. Gray, Vol. II. p.-8vo, 12*s.*—Why do you believe the Bible? by J. Bateman, 2d edit. 12mo, 4*s.*—The Forget-Me-Not for 1845, 12*s.*—Manual of Colours, 3*s.* 6*d.*—The Star of Atthéghéi, and other Poems, by Frances Brown, fcp. 4*s.* — Stone's Practice of the Petty Session. 5th edit., by W. A. S. Westoby, 12mo, 8*s.*—Howard's Lessons on the Old and New Testament, 4th edit. 18mo, 3*s.* 6*d.*—The Little Book of Nature, 36mo, 5*s.*

DENT'S TABLE FOR THE EQUATION OF TIME.

[This table shews the time which a clock or watch should indicate when the sun is on the meridian.]

1844.	h.	m.	s.	1844.	h.	m.	s.
Oct. 26	11	44	3·5	Oct. 30	11	43	46·5
27	—	43	58·1	31	—	43	44·2
28	—	43	53·5	Nov. 1	—	43	42·8
29	—	43	49·6				

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